OPERATOR MANUAL

Basil® 5700LSR
Cage and Rack Washer

(2009-12-10) **P920512-768**

WARNING — COPYRIGHT PROHIBITED

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A WORD FROM STERIS CORPORATION

This manual contains important information on the proper use of this equipment. Refer to *SECTION 6, ROUTINE MAINTENANCE,* for instructions in routine care of this washer. **All personnel and department heads are urged to carefully review and become familiar with the Safety Precautions and instructions contained herein.** These instructions are important to protect the health and safety of personnel operating this **Basil® 5700LSR Cage and Rack Washer** and should be retained in a conveniently accessible area for quick reference. This equipment is specifically designed only for the uses outlined in this manual.

Complete instructions for uncrating and connecting utilities, as well as equipment drawings, have been provided. If they are missing, contact STERIS for replacement copies, providing the serial and model numbers of the unit.

Regarding utilization of VHP module, refer to the *EQUIPMENT MANUAL SUPPLEMENT* (P129390-699 for the *VHPM100-ABX BIODECONTAMINATION SYSTEM* or P129390-700 for the *VHP1000-ARD BIODECONTAMINATION UNIT*) for further instructions.

Advisory

IMPORTANT: *A listing of the Safety Precautions to be observed when operating this washer can be found in SECTION 1. Do not operate the equipment until you have become familiar with this information.*

STERIS does not intend, recommend or represent in any way that this **Basil 5700LSR Cage and Rack Washer** be used for the sterilization of any animal care or other devices which have been contaminated with pathogenic microorganisms.

Any alteration of this equipment not authorized or performed by STERIS which could affect its operation or safety features will void the warranty, could adversely affect sanitization efficacy, could violate national, state and local regulations and could jeopardize your insurance coverage.

Articles processed in the Basil 5700LSR Cage and Rack Washer must tolerate temperatures and chemicals specified in this manual. Always follow item manufacturer recommendations for cleaning instructions.

To help ensure operators are adequately trained in the safe use of the equipment, STERIS recommends:

- all personnel who operate or maintain the equipment are trained in its operation and in its safe use;
- personnel working with toxic chemicals and vapors (if applicable) have comprehensive instructions in the **washer** process, relevant health hazards and methods to detect the escape of toxic materials;

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- there is regular training of all personnel involved in the operation and maintenance of the equipment; attendance records are maintained; and that evidence of understanding is demonstrated.

Indications For Use

The **Basil 5700LSR Cage and Rack Washer** is intended for use in the sanitization of soiled, reusable animal care devices (such as cages, racks, debris pans, feeder bottles) and other miscellaneous items by providing thorough washing and optimal drying.

This equipment is specifically designed to only process goods as outlined in this manual. If there is any doubt about a specific material or product, contact the manufacturer of the product for the recommended cleaning technique.

Safety hazards may occur if unit is used for other purposes than stated above.

Service Information

A thorough preventive maintenance program is essential to help ensure safe and proper equipment operation. Customers are encouraged to contact STERIS concerning extended service maintenance agreements to give the washer planned maintenance and help ensure equipment performance according to factory specifications.

A global network of skilled service specialists can provide periodic inspections and adjustments to help ensure low-cost peak performance. STERIS can provide information regarding the annual maintenance program.

STERIS carries a complete line of accessories for use in this equipment. Please contact STERIS for details.

Certification

This **Basil 5700LSR Cage and Rack Washer** complies with the following standards:

- **Governing Directive for the Affixing of the CE Mark:**
  Machinery Directive (98/37/EC).
- **Underwriters Laboratories, Inc. (UL)**
  UL 61010-1, Second Ed.
- **Canadian Standards Association (CSA)**
  CAN/CSA C22.2 No. 61010-1, Second Ed.
- **Conformity to Other Applicable Directives:**
  Electromagnetic Compatibility Directive (2004/108/EC) and amendments (91/368/EEC, 93, 44, EEC);
  Low Voltage Directive 2006/95/EC.
- **Standards applied to demonstrate conformity to the directives:**
  EN/IEC 61010-1, EN/IEC 61326-1.

The base language of this document is ENGLISH. Any translation must be made from the base language document.

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SAFETY PRECAUTIONS

1

The following *Safety Precautions* **must** be observed when operating and servicing this Basil® 5700LSR Cage and Rack Washer. WARNING indicates potential for personal injury and CAUTION indicates potential for damage to equipment. For emphasis, certain *Safety Precautions* are repeated throughout the manual. **It is important to review ALL *Safety Precautions* before operating and servicing the unit.**

WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD:

- Before servicing or cleaning unit, always turn LOCK/UNLOCK/INIT key selector to LOCK position to prevent cycle operation. Keep the key on yourself.
- Ensure wash chamber is completely dry before processing a VHP cycle.
- Only STERIS or STERIS-trained service technicians should make repairs and adjustments to this equipment. Maintenance done by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate warranty or result in costly damage. Contact STERIS regarding service options.
- Regularly scheduled preventive maintenance, in addition to faithful performance of minor maintenance described in this manual, is required for safe and reliable operation of this equipment. Contact STERIS to schedule preventive maintenance.

WARNING – PERSONAL INJURY HAZARD:

- Always wear appropriate personal protective equipment (PPE), including gloves and faceshield, when cleaning or removing debris from bottom of the wash chamber and from sump filters.
- Always verify flap door sill is down before entering wash chamber.
- If cycle has not been completed, contaminated debris or water may remain in the bottom of wash chamber.
- Keep hands/fingers away from closing doors to prevent crushing.
- Never perform cleaning of wash chamber until full cycle has been completed. If cycle has not been completed, contaminated debris or water may remain in the bottom of wash chamber.
- To open door from inside wash chamber, pull emergency stop cable; then, pull emergency door handle. Door may easily be open.
- To prevent tipping, place biggest and heaviest items on the lower levels of accessory cart.
- Cages and items in washing cart may move during processing and be filled with residual hot water or protrude from cart at the end of the cycle. Always wear appropriate Personal Protective Equipment (PPE) and carefully remove cages and items from cart.

WARNING – ELECTRIC SHOCK HAZARD:

Always set building electrical-supply disconnect switch and console master power switch to OFF before performing any preventive maintenance functions within the compartments. Electrical shock can cause serious injury.

Disconnect all utilities to washer before servicing. Do not service washer unless all utilities have been properly locked out. Always follow local occupational health and safety regulations, as well as electric and plumbing codes.

WARNING – BURN HAZARD:

After pressing STOP touch pad, wait until water flow stops before opening doors. Hot water/steam may be sprayed through door opening if doors are opened too soon.

Before performing any service on unit, wait until chamber and piping cool to room temperature.

Except for emergency, do not open door when cycle is in progress. In an emergency, stop cycle by pressing EMERGENCY STOP pushbutton and wait for safety delay to elapse before opening doors. Hot water and steam could be sprayed through door opening if doors are opened too soon.

Inner surfaces of washer are very hot after cycle completion. Operator should wear appropriate personal protective equipment (PPE), including gloves and faceshield and avoid all contact with inner walls when entering chamber to unload washer.

Pipes may be extremely hot.

WARNING – CHEMICAL BURN HAZARD:

Always use non-foaming chemical for effective cleaning and proper pump and water level control operation. Follow manufacturer's recommendations for amount of chemical to be used.

Washer chemicals are caustic and can cause adverse effects to exposed tissues. Do not get in eyes, on skin or attempt to swallow. Read and follow precautions and instructions on chemical label and in Material Safety Data Sheet (MSDS) prior to handling chemical, refilling chemical container or servicing chemical injection pump or lines. Wear appropriate Personal Protective Equipment (PPE) whenever handling chemical or servicing chemical injection pump and lines.

Wear appropriate personal protective equipment (PPE), including gloves and faceshield, when using a descaling product. Avoid contact with eyes or skin. If spilled or splashed, flush with water for 15 minutes. If swallowed, DO NOT induce vomiting. Administer an alkali with plenty of water. Seek medical attention immediately.

WARNING – SLIPPING HAZARD:

To prevent slips, keep floor dry. Promptly clean up any spills or condensation. If spilled liquids are detergents or other chemicals, follow safety precautions and handling procedures set forth on detergent or chemical label and/or Material Safety Data Sheet (MSDS).

CAUTION – POSSIBLE EQUIPMENT DAMAGE:

- Always use a silicone lubricant to lubricate squeeze tubes. Petroleum-based lubricants, such as Vaseline®[1] or grease, will cause squeeze tubes to melt.
- Avoid product damage. Always select a cycle appropriate for the items being processed.
- Before operating the unit, always position Bottle Washing Cart or Central Header Manifold over the manifolded coupling system. If manifold is not positioned correctly, damage may result and unit will be unable to effectively wash load.
- Do not process load using Central Header Manifold or Bottle Washing Cart when Automatic Floor Tilting is activated. If Automatic Floor Tilting is used, manifolded water inlet and washer will be damaged.
- Failure to connect wires to proper terminals may result in damage to, or malfunction of unit when power is applied.
- Items processed in the washer must tolerate temperatures and chemicals specified in this manual. Always follow item manufacturer's recommendations for cleaning instructions.
- Remove all cellulose type bedding from cages and pans before processing. Cellulose bedding may clog filters and piping.
- Remove any items, accessories or racks from wash chamber before processing a drying treatment prior to a VHP cycle. Items will be damaged by high temperature drying.
- Repeated fuse burnouts indicate a short circuit or overload. Trouble should be located and corrected by a fully trained technician.
- Use nonabrasive cleaners when cleaning unit. Follow directions on containers and rub in a back-and-forth motion, in same direction as surface grain. Abrasive cleaners will damage stainless steel. Cleaners rubbed in a circular motion or applied with a wire brush or steel wool on door and chamber assemblies will damage stainless steel. Do not use these cleaners on painted surfaces.
- When choosing a chemical, select one with a low chloride content. Chloride is harmful to stainless steel and will deteriorate washer.

1 Vaseline is a trademark of Cheseborough Pond's Incorporated.

Tables 1-1 and 1-2 contain symbols which may be on your Basil 5700LSR Cage and Rack Washer components:

Table 1-1. Definition of Symbols on Unit

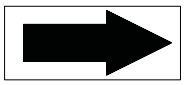
Symbol	Definition
	Protective Earth (Ground).
	Transfer of Heat, Hot Surface.
	Warning! Risk of Electrical Shock.
	Attention, Consult Manual For Further Instructions.
	Warning! Do Not Step Here.
	Fork Lift: Place Forks of the Fork Lift Here.
	Rotation: Direction of Rotation Device.
PRESET AT FACTORY	Factory Adjustment: Do Not Adjust.
	Unlock and Allow Cycle Operation.
	Lock and Prevent Cycle Operation.
	Reset.

Table 1-2. Definition of Symbols on Identification Nameplate

Symbol	Definition
MODEL	Model Number of The Unit.
S/N	Serial Number of The Unit.
YEAR	Year of Manufacture of The Unit.
kVA	Kilovolt-Ampere.
V_~	Volt, Number of Phase (3 or 1[blank]), Alternate Current.
A	Amperage.
Hz	Hertz – Frequency of The Unit.
WIRE	Number of Wires In The Electrical Cable (Ground Not Included).

INSTALLATION VERIFICATION

2

IMPORTANT: *A listing of the Safety Precautions to be observed when operating this Cage and Rack Washer can be found in SECTION 1. Do not operate equipment until you have become familiar with this information.*

2.1 General

Equipment drawing (920-512-757) showing all utility and space requirements was sent after the order for the **Basil® 5700LSR Cage and Rack Washer** was received. The clearance space specified on equipment drawing is necessary for proper installation, operation and maintenance. *Uncrating/Installation Instructions* (P920512-767) were provided with the washer. If these documents are missing or misplaced, contact STERIS giving the serial, equipment and model numbers of the unit. Replacement copies will be sent to you promptly.

2.2 Technical Specifications

These specifications are intended to describe the technical information given on the identification nameplate of the washer and to state other relevant information. Refer to equipment drawing or identification nameplate located on frame of mechanical core, below main electrical box, for proper voltage and amperage.

2.2.1 Voltage, Amperage and Power Consumption

This unit operates either on:

- 208 V~, three-phase, 60 Hz;
- 380/400/415 V~, three-phase, 50 Hz;
- 480 V~, three-phase, 60 Hz.

A protective ground conductor is required (Class 1 Equipment).

Installation Category II (Overvoltage Category).

Refer to ***SECTION 3.9, ELECTRICAL CONNECTIONS***, of *Uncrating/Installation Instructions* (P920512-767) for proper connection.

Maximum currents and power consumptions:

	Amp	**kVA**
208 V	37.0	13.3
380/400/415 V	18	15
480 V	18	15

2.2.2 Permissible Environmental Conditions

This washer is designed to give optimal results under the following conditions:

Indoor use only;
Altitude of operation up to: 6,267 ft (2,000 m);
Maximum relative humidity is 80% for temperatures up to: 88°F (31°C) decreasing linearly to 50% relative humidity at 104°F (40°C);

Pollution degree 2.

2.2.3 Noise Level

Equivalent Sound Pressure Level at work station, measured 3 ft (1 m) away from equipment and at 5 ft (1.6 m) from ground: **76.6 dB (A)**.

2.2.4 Seismic Anchorage System

A Seismic Anchorage System is available for high risk seismic zones (see *Seismic Anchorage Report 920-512-776* for washer and *920-512-769* for mechanical core).

2.3 Installation Checklist

After installing the washer according to the *Uncrating/Installation Instructions* (P920512-767), complete the following checklist to help ensure complete and correct installation, or contact STERIS to schedule a technician to test your installation and demonstrate proper equipment operation.

- ❑ Shutoff valves (not provided by STERIS), for maintenance purposes and capable of being locked in OFF position only, installed on steam, air and water lines and in compliance with local occupational health and safety regulations, as well as electric and plumbing codes.
- ❑ Disconnect switches (not provided by STERIS), for maintenance purposes and capable of being locked in OFF position only, installed in electrical supply lines near the unit and in compliance with local occupational health and safety regulations, as well as electric and plumbing codes. Disconnect switches must bear the identification of the equipment to which they are connected.

  NOTE: If unit is installed next to other equipment, shutoff valves and disconnect switches should be located so service can be shut off to one piece of equipment at a time.
- ❑ Washer is positioned as shown on equipment drawing, with required clearance space and in relation to building supply lines.
- ❑ Washer is level. Remove cabinet panel and adjust leveling legs if necessary.

- ❑ Electrical supply for unit is as specified on equipment drawing.
- ❑ Electrical connections between washer and mechanical core are as specified in ***SECTION 3*** of *Uncrating/Installation Instructions* (P920512-767).
- ❑ Verify electrical boxes. Ensure no foreign objects inside electrical boxes. Also check for any unconnected wires.
- ❑ Verify all electrical connections are plugged in and/or connected.
- ❑ Building hot water line supplies water to unit as specified on equipment drawing.
- ❑ **If Drain Discharge Cool Down System with Cold Water Injection is present,** building cold water line supplies water to unit as specified on equipment drawing.
- ❑ **If Drain Discharge Cool Down System with Chilled Water and pH Neutralizing System is present,** building cold water line supplies water to unit as specified on equipment drawing.
- ❑ Building steam line provides steam to unit as specified on equipment drawing.
- ❑ Building condensate return line is connected to washer as specified on equipment drawing.
- ❑ Building waste line is connected to washer as specified on equipment drawing.
- ❑ Piping connections between washer and mechanical core are as specified in ***SECTION 3*** of *Uncrating/Installation Instructions* (P920512-767).
- ❑ Building ventilation system is connected to washer as specified on equipment drawing.
- ❑ Building air line supplies air to unit as specified on equipment drawing.
- ❑ Air line connections between washer and mechanical core are as specified in ***SECTION 3*** of *Uncrating/Installation Instructions* (P920512-767).
- ❑ Verify all clamps and unions on washer and mechanical core. Tighten if necessary.
- ❑ All pneumatic connections and switches are properly installed, adjusted and connected.
- ❑ **If Drying System option is present,** drying system connections between washer and mechanical core are as specified in ***SECTION 3*** of *Uncrating/Installation Instructions* (P920512-767).
- ❑ Springs for emergency stop cables (on top of washer) are correctly installed on microswitch.
- ❑ Switch(es) for EMERGENCY STOP pushbutton, located on control access panel on load side for single door units or on both load and unload side, if double-door unit, are correctly installed.

- ❑ Verify for any construction and/or installation debris, inside and outside wash chamber, under floor gratings and on sump filters. Clean or discard.
- ❑ Verify spray headers and spray header cables. All cables are properly tightened.
- ❑ Verify headers travel to the top and bottom of the wash chamber without touching top or bottom pulleys and guides. Verify proper installation.
- ❑ Inspect doors for alignment and smooth movement.
- ❑ Verify all the protective paper has been removed from stainless steel.
- ❑ Floor underneath and surrounding unit has a noncombustible and nonslip surface, or is covered with a metal sheet extending to the outer edges of the unit.
- ❑ **If Ramp Accessory is present,** ramp is correctly attached to washer as specified in ***SECTION 3*** of *Uncrating/Installation Instructions* (P920512-767).

IMPORTANT: *After a few weeks of operation, inspect unit for leaks. Retighten all clamps and connections.*

2.4 Chemical Additives Specifications

The selection of chemical additives is open for Customer preference; however, to achieve optimal performance, the selected chemical additives must meet as a minimum, the following specifications:

Product Description	Use Dilution Range Oz/Gal (mL/L)	pH Range at Use Dilution	Other Applicable Requirements
Alkaline Chemicals	1/4 - 4 (2 - 32)	9.0 - 12.0	Liquid, non foaming, and viscosity below 200 SSU (0.0004623 ft²/sec).
Acidic Chemicals	1/4 - 4 (2 - 32)	3.0 - 6.0	Liquid, non foaming, free rinsing, and viscosity below 200 SSU (0.0004623 ft²/sec).
Descalers	1/2 - 2 (4 - 16)	< 2.5	Liquid, non foaming, phosphoric acid based and viscosity below 200 SSU (0.0004623 ft²/sec).

NOTE: When choosing and using chemicals, note the following:

1) *Follow chemical label recommendations for concentration of chemical to use.*
2) *Follow chemical manufacturer's recommendations to determine the temperature of the Wash treatment.*
3) *Follow chemical manufacturer's recommendations for the amount of chemical used according to water hardness.*

To achieve maximum cleaning efficiency, select chemical appropriate to soil type being processed. STERIS recommends the following chemicals:

- **Cage-Klenz® 100 Alkaline Cage Wash Detergent –** is a liquid, phosphate-free detergent for use in high pressure spray animal cage washing equipment. This product is safe and effective in both soft and hard water for the removal of organic soils. It is suitable when used as directed to clean all types of metal cages (steel, aluminum, copper and other common alloys) as well as most plastics.
- **Cage-Klenz® 150 Alkaline Cage Wash Detergent –** is a chlorinated alkaline detergent for use in automatic washing equipment, including cage and bottle washers. This product is formulated to significantly extend the stability of the active chlorine, providing efficient cleaning of a broad spectrum of soils.
- **Cage-Klenz® 180 Alkaline Cage Wash Detergent –** is an economical, general purpose alkaline detergent for use in high pressure spray animal cage washing equipment. This product is safe and effective in both soft and hard water for the removal of organic soils. It is suitable when used as directed to clean all types of metal cages (steel, aluminum, copper and other common alloys) as well as most plastics.

- **Cage-Klenz® 200 Acid-Based Cage Wash Detergent –** is a high performance phosphoric acid-based formulated detergent for removal of a wide spectrum of soils, including hard water scale, urine scale and metal oxide.
- **Cage-Klenz® 220 Acid-Based Cage Wash Detergent –** is a liquid, phosphate-free, hydroxyacetic acid-based detergent formulated for the safe and effective removal of hard water scale, urine scale, organic soils and metal oxides.
- **Cage-Klenz® 250 Acid-Based Cage Wash Detergent –** is a liquid, phosphate-free, citric acid-based detergent formulated for the safe and effective removal of hard water scale, urine scale, organic soils, and metal oxides.
- **Cage-Klenz® 280 Acid-Based Cage Wash Detergent –** is an economical, phosphoric acid-based formulated detergent for removal of a wide spectrum of soils, including hard water scale, urine scale and metal oxide.
- **CIP Neutralizer™ Alkaline Based Neutralizer** – is used to raise pH and alkalinity. It can be used to neutralize acidic solutions, boost the efficiency of compatible cleaning processes and to serve as a cleaner for lipids and other fatty type soils.

NOTE: Certain products may not be available in your area. Contact STERIS for availability of these products and for ordering information.

***IMPORTANT:** STERIS does not promote, recommend nor endorse the use of any other type of chemical additives in the processing of articles in the Basil 5700LSR Cage and Rack Washer, such as drying agents, strong alkaline detergents (pH>12), alcohol rinses and liquid germicides including sodium hypochlorite (bleach).*

COMPONENT IDENTIFICATION

3

IMPORTANT: *A listing of the Safety Precautions to be observed when operating this Cage and Rack Washer can be found in SECTION 1. Do not operate equipment until you have become familiar with this information.*

3.1 Component Identification

Before operating the **Basil® 5700LSR Cage and Rack Washer**, it is important to become familiar with the location and function of all major components and controls (see Figure 3-1).

Washer is equipped with a user-programmable PLC control system capable of storing up to twelve treatment cycles to process a wide variety of loads. Computer control system monitors and automatically controls all cycle operations.

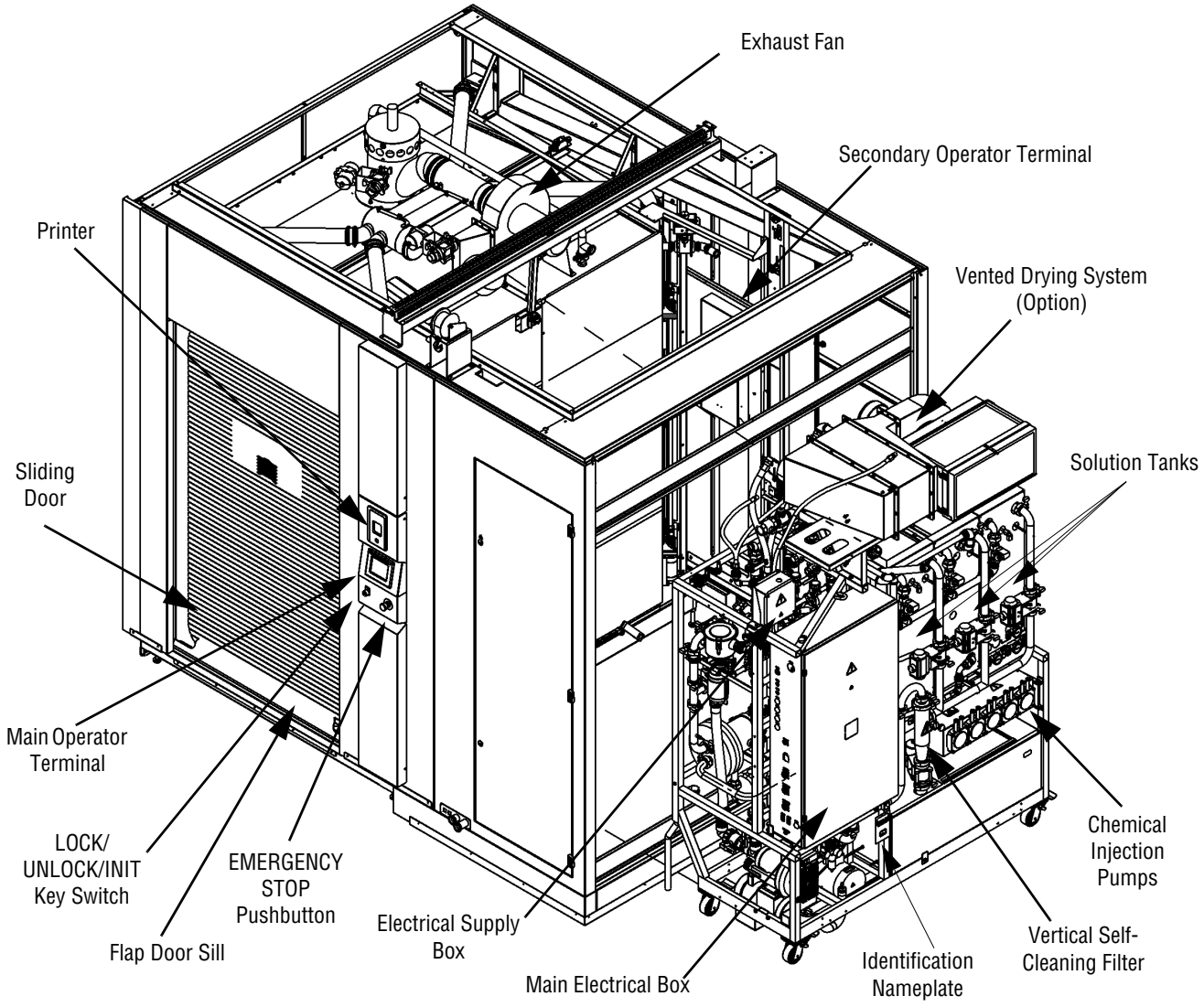


Figure 3-1. Basil 5700 LSR Cage and Rack Washer Components

3.2 Operator Terminal

See Figure 3-2.

The Basil 5700LSR Cage and Rack Washer is equipped with an Allen-Bradley CompactLogix™ PLC control system[1] that features twelve cycles for processing a wide variety of loads.

System monitors and controls washer operations and functions and also monitors current status of chamber, including current chamber temperature and time remaining in phase.

Control system offers three operation modes: Supervisor, Service and Cycle. The first two modes are password protected. Cycle mode is always available.

In case of battery failure, an alarm warns operator that battery (P117-915-348) must be replaced.

There is an operator terminal on load side and an operator terminal on unload side for double door units. Identical information is displayed on both load and unload operator terminals.

3.2.1 Login Passwords

Supervisors and service users with appropriate passwords can access Supervisor mode.

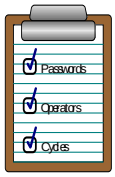
Only a qualified service technician can access Service mode. A predefined password is required to access Service mode.

3.2.2 Cycle Mode

Cycle mode is the default operating mode of the washer. No password is required to enter in Cycle mode.

Operator closes door, manually selects desired cycle in touch screen, presses **START** touch pad and appropriate cycle starts.

3.2.3 Supervisor Mode

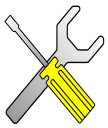


Supervisor mode allows supervisor to modify preprogrammed parameters and options within a range of factory set values such as date and time and to enable printer functions.

Supervisor mode access is secured by a password. Supervisor password is configured in Supervisor mode.

[1] *CompactLogix™ is a trademark of Allen-Bradley, a Rockwell Automation Company.*

3.2.4 Service Mode



Service mode allows a qualified service technician to access Service mode menu to configure washer and to perform preventive maintenance, testing and troubleshooting. Service mode is not accessible to operator or supervisor.

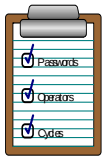
A predefined password is required to access Service mode.

3.2.5 Operator Terminal Touch Screen

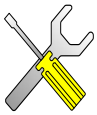
Operator terminal screen is a touch-sensitive color graphics screen. Touch screen displays current status of chamber, including current chamber temperature and phase remaining time, cycle data and operator instructions. Touch screen also indicates any faults that may occur during a cycle.

Touch pads are displayed on touch screen and vary from one menu to another. Some values may be selected in scroll down menus using arrows displayed on touch screen.

Touch Pads:

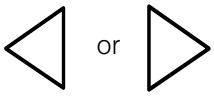


Supervisor mode: Press **Supervisor mode** on OPTIONS screen to access Supervisor Mode Login screen.



Service mode: Press **Service mode** on OPTIONS screen to access Service Mode Login screen.

CLOSE: Press **X** (CLOSE) on touch screen to exit a screen and return to previous screen.



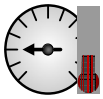
Left or Right arrow: For forward and back navigation. Press **Left** or **Right arrow** on touch screen to scroll across a screen to view all menus and/or possible selections available.

STOP: Press **STOP** on touch screen to interrupt or abort cycle.

ALARM: Symbol displayed on Alarm screen, along with **FAULT** messages.

SILENCE BUZZER: Press **SILENCE BUZZER** on touch screen to stop alarm buzzer.

ACK: Press **ACK** on touch screen to stop alarm buzzer and acknowledge displayed **FAULT** messages.

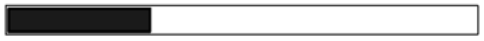


DETAILS: Press **DETAILS** on touch screen to view current cycle written data of parameters.

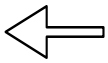
PRINT: Press **PRINT** on touch screen to print specific information from the Cycle, Service and Supervisor modes.

CYCLES: Press **CYCLES** on touch screen to access Cycles menu.

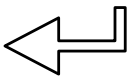
GEARS: Press **GEARS** on touch screen to access Machine Setup menu.



Progress Bar: **Progress Bar** is displayed on Chamber screen while cycle(s) is (are) in progress to show cycle(s) progress.



BACKSPACE: Used on Numeric Keyboard. Press **BACKSPACE** on touch screen to move one position backwards and delete the preceding space or character.



ENTER: Used on Numeric Keyboard. Press **ENTER** on touch screen to confirm a selection and/or an entry.

3.2.6 Audible Signal

An audible signal warns operator that an action must be taken.

3.3 Printer

See Figure 3-2.

The printer, located on load side control panel, records all cycle data and any abnormal condition during operation.

Printer allows operator to print cycle data and washer malfunction data. Specific information is printed from Cycle mode (cycle parameters, alarms), Service mode (washer configuration values) and Supervisor mode (supervisor's list, supervisor setup).

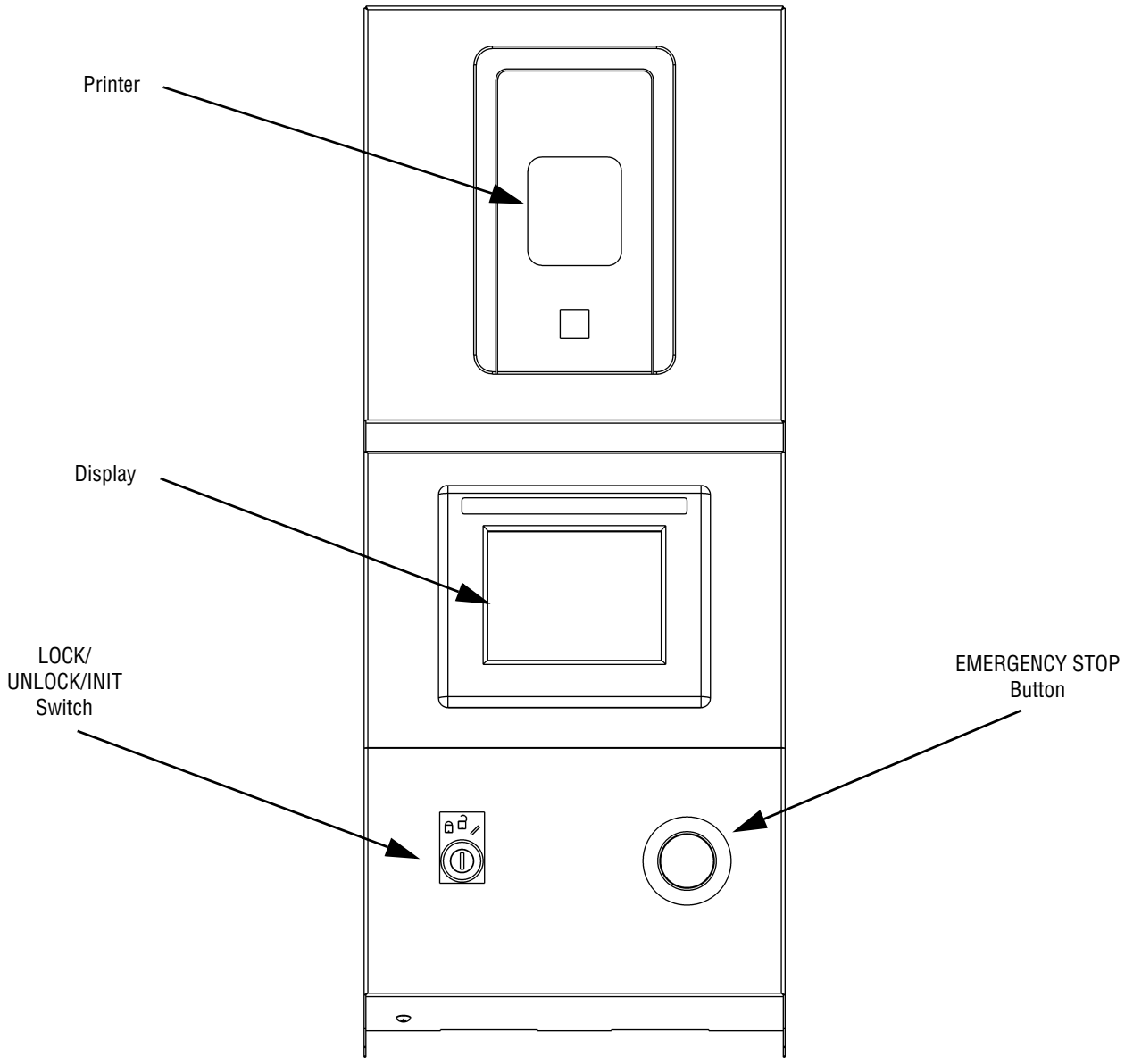


Figure 3-2. Operator Terminal and Printer

3.4 Typical Printouts

Figure 3-3 and Figure 3-4 are examples of typical cycle printouts.

- **POWER UP**

  When Power Switch is set to **POWER**, generated printout lists time and date control was turned on, unit's model and serial number and the software ID and version.

- **CYCLE START**

  When **START** touch pad is pressed to begin selected cycle, generated printout lists name of cycle started, time and date cycle was started, cycle number and unit number.

- **IN-CYCLE PERFORMANCE**

  During a cycle, generated printout lists start and end time of each phase, along with actual temperature of solution/water in chamber sump.

- **END-OF-CYCLE PERFORMANCE SUMMARY**

  At end of a cycle, generated printout lists time cycle was completed, maximum wash and rinse temperatures reached during cycle and total cycle processing time.

- **ALARM CONDITION**

  When an alarm condition occurs, generated printout lists type of alarm and time it occurred (see Figure 3-4). Once operator presses **ACK** touch pad, generated printout lists time when alarm was acknowledged.

```
CYCLE - CYCLE 4

CYCLE START       2007-03-30    09:22:22
CYCLE COUNT       63
SERIAL NUMBER:    36XXXXXXXX

ALK. WASH
- START           09:28:59      47.5°C
- END             09:29:04      43.5°C
- DRAINING SUMP   09:29:15
- TEMPERATURE     31.0°C

ACID WASH
- START           09:30:45      81.9°C
- END             09:34:48      77.8°C
- ACID SOAK       09:34:53
- BYPASSED
- DRAINING SUMP   09:35:86
- TEMPERATURE:    57.7°C

FINAL RINSE
- START           09:35:26      42.9°C
- END             09:35:37      32.5°C
```

Figure 3-3. Sample Printout

```
* ALARM
2007-03-30      09:43:59
COOLDOWN TANK TOO LONG TO DRAIN
```

Figure 3-4. Sample Alarm Printout

3.5 Sliding Doors

See Figure 3-1.

Sliding doors provide access to the wash chamber. Door movement is power-controlled by **DOOR OPEN** and **DOOR CLOSE** touch pads appearing on touch screen.

- **Interlock Feature (Double-Door Units)**

If unit is equipped with double doors, a door interlock feature prevents cross-contamination by allowing only one door to be opened at a time. Doors can be opened only one at a time.

If opening of both doors at the same time is more practical for facility applications, it is possible to bypass the interlock system in Service mode by a STERIS or STERIS-trained service technician. When interlock feature is deactivated, pressing DOOR CLOSE or DOOR OPEN touch pads on either side of washer automatically opens or closes both doors simultaneously.

3.6 Emergency Safety Features

3.6.1 LOCK/UNLOCK/INIT Key Switch

LOCK/UNLOCK/INIT switch is located on control panel and can be turned only using a key (see Figure 3-2). For added safety, key must be accessible only to trained operators. Switch includes three settings:

1. **LOCK** – use key to turn selector switch to the left to **LOCK** position to lock washer for minor maintenance purposes. When switch is in **LOCK** position, operator cannot start a cycle and display shows:

   WASHER LOCKED

   As an additional safety measure, key should be removed from switch and kept by operator until ready to unlock washer.

2. **UNLOCK** – use key to turn selector switch to **UNLOCK** position to unlock washer and enable washer to resume normal operation.

3. **INITIALIZATION** – use key to turn selector switch to the right to reset washer normal operation after emergency stop cables or EMERGENCY STOP pushbutton were activated, after a power up or the return of current after a power failure.

   NOTE: Selector returns automatically from reset to UNLOCK position when key is released.

   ***IMPORTANT:** If Safety latch was raised, return Safety latch into position before initializing washer.*

3.6.2 EMERGENCY STOP Cables

EMERGENCY STOP cables, located on each side of wash chamber, instantly stop washer operation when pulled (see Figure 3-5). Pull on either cable to stop washer.

NOTE: After EMERGENCY STOP cable is activated, washer must be reinitialized using LOCK/UNLOCK/INIT key switch.

3.6.3 EMERGENCY STOP Pushbutton(s)

EMERGENCY STOP pushbutton(s) located under load side operator terminal and if double-door unit, on unload side operator terminal, instantly stop washer operation when pressed (see Figure 3-5).

EMERGENCY STOP pushbutton(s) cut off electrical power to control only and completely depressurize unit.

*NOTE: After pulling out **EMERGENCY STOP** pushbutton, washer must be reinitialized using **LOCK/UNLOCK/INIT** key switch.*

***IMPORTANT:** If Safety latch was lowered, return Safety latch into position before initializing washer.*

3.6.4 Safety Latches

There are two Safety latches to open the sliding doors in an emergency situation. One safety latch is inside wash chamber and the other is in the service area (on door counterweight guide). Safety latches should be lowered to open door in case of a power/air failure. Before using safety latch EMERGENCY STOP pushbutton must be pushed or EMERGENCY STOP Cables must be pulled.

Return Safety latch to vertical position before resetting the key using LOCK/UNLOCK/INIT Switch.

3.6.5 Audible Alarm Signal

An audible alarm signal sounds during the first three seconds when doors open.

3.6.6 Safety Delay

An adjustable safety delay (0 to 60 seconds) during which washer sounds an alarm signal has been provided. Audible alarm signal warns operator to leave wash chamber before cycle starts. Default safety delay is 15 seconds and is adjustable in Service mode by a STERIS or STERIS-trained technician only (refer to ***Section 2, Service Mode Procedures***, in *Maintenance Manual* [P764333-606]).

Double Door Unit Shown

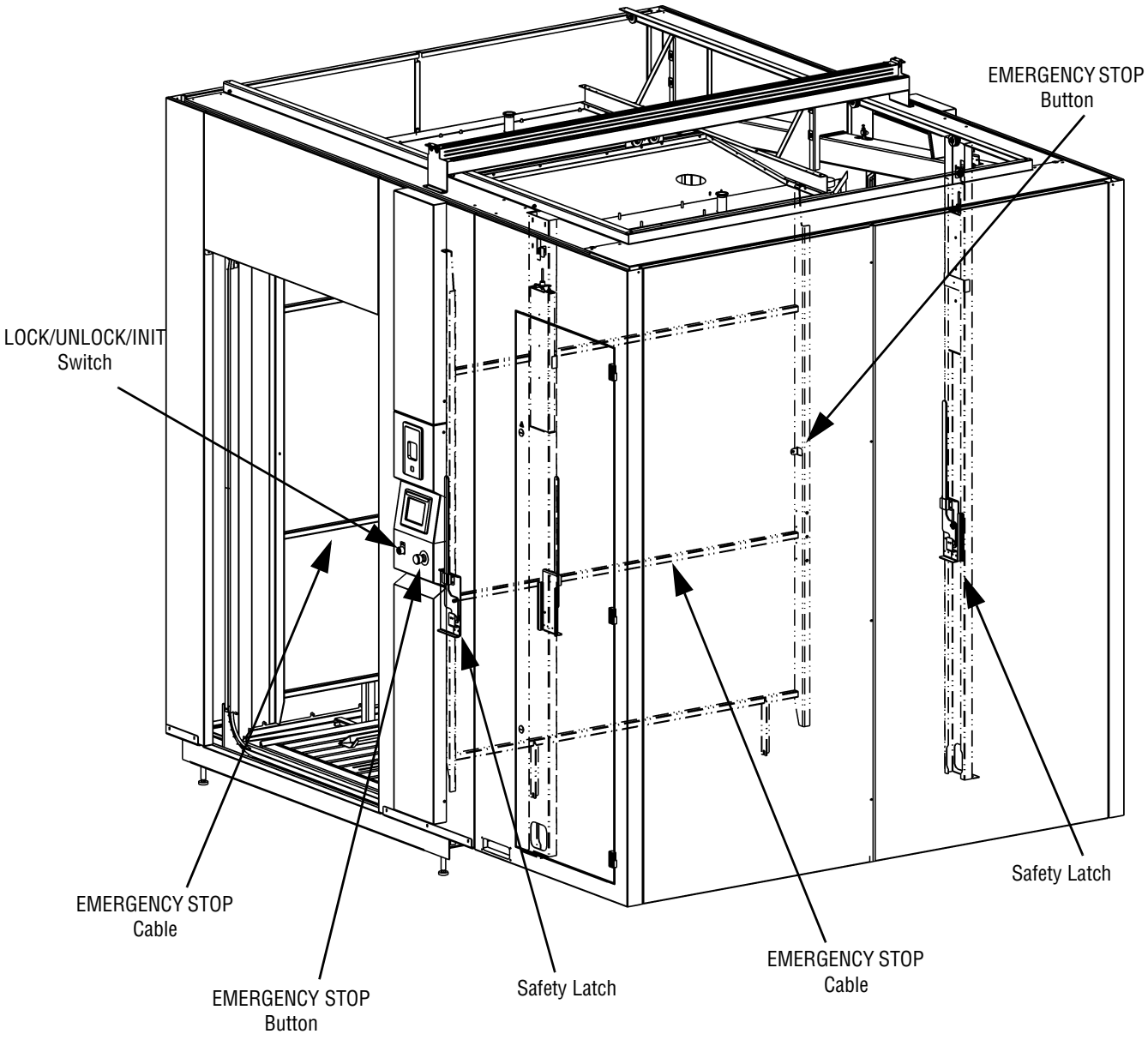


Figure 3-5. Emergency Safety Features

OPERATING INSTRUCTIONS

4

IMPORTANT: *A listing of the Safety Precautions to be observed when operating this Cage and Rack Washer can be found in SECTION 1. Do not operate equipment until you have become familiar with this information.*

4.1 Before Operating Washer

WARNING – SLIPPING HAZARD: To prevent slips, keep floor dry. Promptly clean up any spills or drippage. If spills or drippage are detergents or other chemicals, follow safety precautions and handling procedures set forth on detergent or chemical label and/or Material Safety Data Sheet (MSDS).

WARNING – CHEMICAL BURN HAZARD: Washer chemicals are caustic and can cause adverse effects to exposed tissues. Do not get in eyes, on skin or attempt to swallow. Read and follow precautions and instructions on chemical label and in Material Safety Data Sheet (MSDS) prior to handling chemical, refilling chemical container or servicing chemical injection pump or lines. Wear appropriate Personal Protective Equipment (PPE) whenever handling chemical or servicing chemical injection pump and lines.

WARNING – BURN HAZARD: Pipes may be extremely hot.

1. Verify building electrical supply disconnect switch (circuit breaker) is positioned to **ON**. Verify steam and water supply valves are open.
2. Ensure **EMERGENCY STOP** pushbuttons are pulled.
3. Open chamber door and verify wash chamber is empty and all material has been removed.
4. Ensure sump filters in bottom of sump are clean and properly installed.
5. Open printer door and verify sufficient amount of printer paper is available.
6. The first time you start your washer, place Power switch to **ON** position. Display shows:

7. Power-up sequence and printer records:

```
**********************************
* POWER-UP          HH:MM:SSA
 YY/MM/DD
 BASIL 5700
SERIAL NUMBER 36XXXXXXXX
117-XXX-XXX REV. X
**********************************
```

NOTE: If nothing is displayed when Power switch is set to POWER, reinitialize washer using LOCK/UNLOCK/INIT switch (see SECTION 3.6.1, LOCK/UNLOCK/INIT KEY SWITCH, or Section 7, Troubleshooting).

8. Mode Selection screen appears.

IMPORTANT: *When operating your unit for the first time, an alarm message showing: "Detergent Name" INJ NOT REACHED; pH CAN'T BE NEUTRALIZED or DESCALER PUMP IS*

*DEFECTIVE appears. Press **ACK** on touch screen to acknowledge alarm and silence buzzer; then, press **RESUME CYCLE**. Unit resumes cycle and primes chemical pumps.*

9. Return to Mode Selection and press **AUTOMATIC** touch pad; Cycle selection screen appears.
10. In Cycle selection screen, select a cycle, then press **CYCLE START** touch pad.
11. Side tanks fill with water.
12. After two minutes, display screen automatically advances to **MODE SELECTION** screen.

4.2 Door Operation

Load end control opens and closes door.
If double-door unit, load end control opens and closes load door only and unload end control opens and closes unload door only.

NOTE: If interlock feature has been disabled, load end control opens and closes load and unload doors.

⚠ WARNING – PERSONAL INJURY HAZARD:

- **Keep hands/fingers away from closing doors to prevent crushing.**
- **Always verify flap door sill is down before entering wash chamber.**

1. In Mode Selection screen, press **DOORS CONTROL** touch pad; then, press **DOOR OPEN** touch pad to manually open doors. Push cart or accessory into wash chamber.
2. Press **X** touch pad to return to Doors Control screen; then, press **DOOR CLOSE** touch pad to close doors.
3. Press **DOOR OPEN** or **DOOR CLOSE** touch pad to interrupt opening or closing of doors.

   ***IMPORTANT:** Keep chamber doors closed between cycles and when washer is not in use.*
4. If an obstruction is detected when door is opening, door stops opening and returns to closed position.
   If obstruction is detected when door is closing, door stops closing and returns to open position. Display shows:

   ALARM:
   ***LOAD* DOOR OBSTRUCTED**
5. Refer to *SECTION 7, TROUBLESHOOTING*, for procedure to correct door obstruction and other possible alarm messages pertaining to door operation.

4.3 How to Load Accessories

To properly clean items and to avoid personal injuries, always follow the following loading guidelines:

1. Ensure no items stick out or hang out of rack. Always use a rack or accessory designed to handle appropriate type of items to be processed.
2. Use specific accessories designed to handle cages, bottles, pans, floor grids and cage doors.

   IMPORTANT: *Remove as much debris as possible from cages and pans before loading accessories.*
3. Use baskets for handling and cleaning various size bottles. Lightweight basket design provides easy handling and simplifies transport and washing of bottles.

⚠ WARNING – PERSONAL INJURY HAZARD: Always verify flap door sill is down before entering wash chamber.

4.3.1 Uses and Capacities

⚠ WARNING – PERSONAL INJURY HAZARD: To prevent tipping, place biggest and heaviest items on the lower levels of accessory cart.

⚠ CAUTION – POSSIBLE EQUIPMENT DAMAGE:

- **Items processed in the washer must tolerate temperatures and chemicals specified in this manual. Always follow item manufacturer's recommendations for cleaning instructions.**
- **Remove all cellulose type bedding from cages and pans before processing. Cellulose bedding may clog filters and piping.**

- **Pan Cart** – (see Figure 4-1) Used to wash debris pans, floor gratings, cage doors, etc.
- **Universal Cage and Pan Wash Cart** – (see Figure 4-2) Used to wash mouse boxes, rat boxes, racks, etc.
- **Central Spray Header Manifold** – (see Figure 4-3) Used with two Rodent Cage Racks (one on either side), doubles chamber load capacity to up to 184 standard mouse cages per load. Requires Manifold Coupling System.
- **Rodent Cage Modular Rack** – (see Figure 4-4) Used to clean and sanitize up to 92 mouse cages or 32 rat cages (shoe boxes), covers and feeder tops.
- **Bottle Washing Cart** – (see Figure 4-5) Used for processing up to six bottle baskets. Requires Manifold Coupling System (option).
- **5 x 5 Bottle Basket, 16 oz (473 mL) bottles** – Used to wash 25 bottles (16 oz [473 mL]).
- **4 x 6 Bottle Basket, 16 oz (473 mL) bottles** – Used to wash 24 bottles (16 oz [473 mL]).
- **5 x 5 Bottle Basket, 8 oz (236 mL) bottles** – Used to wash 25 short 4" (10 cm) bottles.
- **4 x 6 Bottle Basket, 8 oz (236 mL) bottles** – Used to wash 24 tall 5-1/2" (14 cm) bottles.

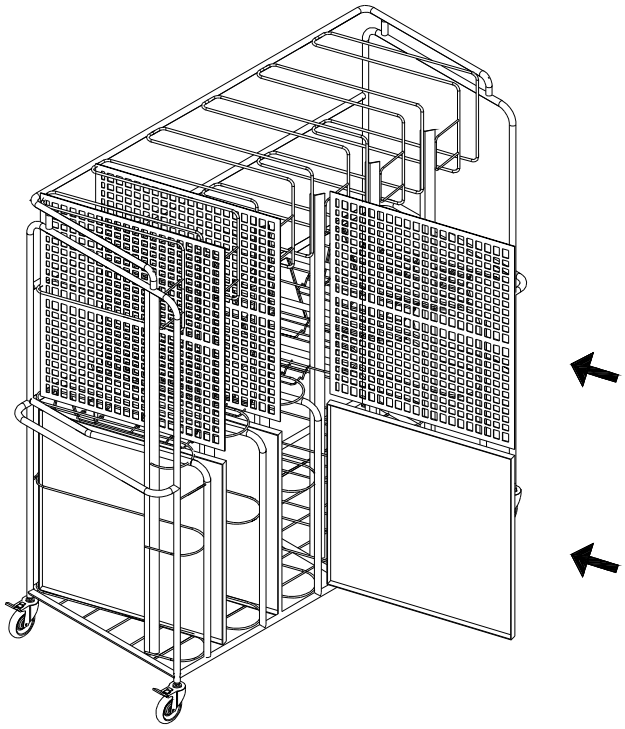


Figure 4-1. Pan Cart

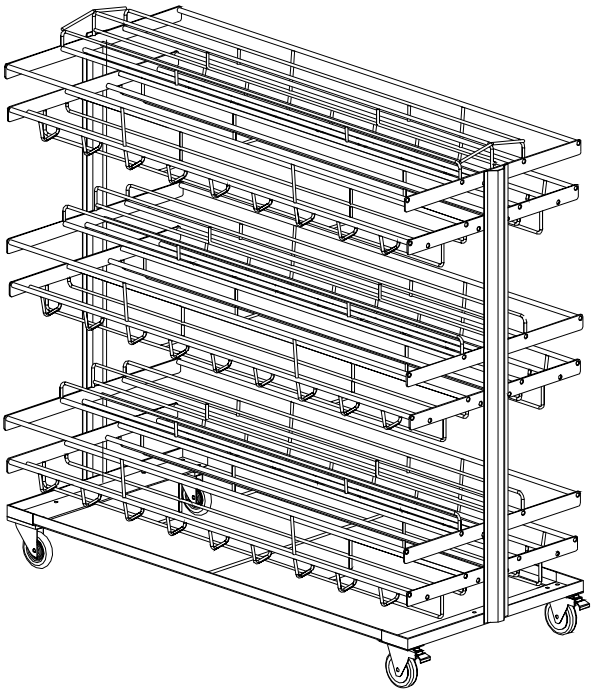


Figure 4-2. Universal Cage and Pan Wash Cart

4.3.2 How to Load Central Spray Header Manifold With Rodent Cage Modular Racks

WARNING – PERSONAL INJURY HAZARD: Always verify flap door sill is down before entering wash chamber.

CAUTION – POSSIBLE EQUIPMENT DAMAGE:

- **Before operating the unit, always position Bottle Washing Cart or Central Header Manifold over the manifolded coupling system. If manifold is not positioned correctly, damage may result and unit will be unable to effectively wash load.**
- **Do not process load using Central Header Manifold or Bottle Washing Cart when Automatic Floor Tilting is activated. If Automatic Floor Tilting is used, manifolded water inlet and washer will be damaged.**

See Figure 4-3 and Figure 4-4.

1. **If Automatic Floor Tilting option is present,** ensure feature is set to **NO** in cycle values. Refer to *SECTION 5.2.4, CYCLE MODIFICATION,* for procedure.
2. Correctly load Rodent Cage Modular Rack (see Figure 4-4). Ensure all items to be treated are correctly positioned on rack.

   Press **DOOR OPEN** touch pad to open doors.
3. Enter wash chamber and roll Central Spray Header Manifold (see Figure 4-3) along central rails until top of header is aligned with roof locking support.
4. Unlock locking pin retaining Central Spray Header to support.
5. Align header on bottom of accessory with water inlet connector at bottom of wash chamber.
6. Push up locking handle towards roof locking support and turn clockwise to secure header into position.
7. Roll Central Spray Header Manifold Support out of wash chamber.
8. Roll one loaded Rodent Cage Rack (see Figure 4-4) inside wash chamber, on either side of Central Spray Header Manifold.

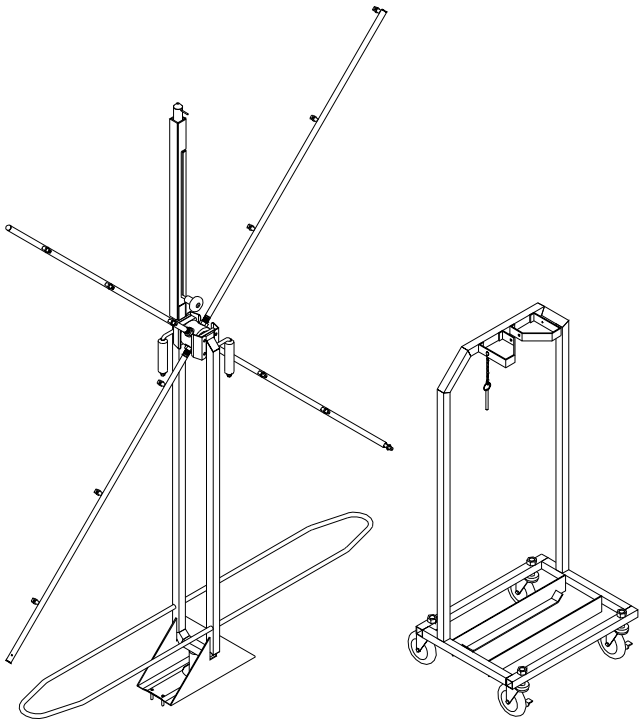


Figure 4-3. Central Spray Header Manifold

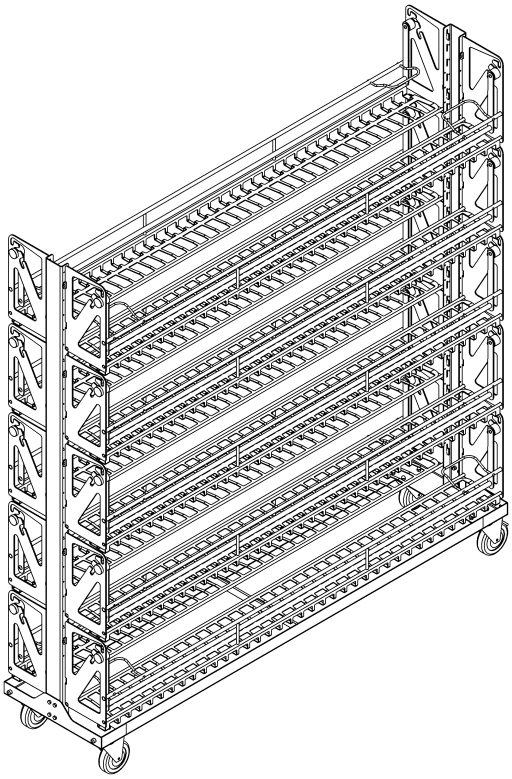


Figure 4-4. Rodent Cage Modular Rack

4.3.3 How to Load Bottle Washing Cart

WARNING – PERSONAL INJURY HAZARD:

- **Always verify flap door sill is down before entering wash chamber.**
- **Cages and items in washing cart may move during processing and be filled with residual hot water or protrude from cart at the end of the cycle. Always wear appropriate Personal Protective Equipment (PPE) and carefully remove cages and items from cart.**

CAUTION – POSSIBLE EQUIPMENT DAMAGE:

- **Before operating the unit, always position Bottle Washing Cart or Central Header Manifold over the manifolded coupling system. If manifold is not positioned correctly, damage may result and unit will be unable to effectively wash load.**
- **Do not process load using Central Header Manifold or Bottle Washing Cart when Automatic Floor Tilting is activated. If Automatic Floor Tilting is used, manifolded water inlet and washer will be damaged.**

See Figure 4-5.

1. **If Automatic Floor Tilting option is present,** ensure feature is set to **NO** in cycle values. Refer to *SECTION 5.2.4, CYCLE MODIFICATION,* for procedure.
2. Load bottles and other containers upside down in adequate basket (see *SECTION 4.3.1, USES AND CAPACITIES*).
3. Place loaded baskets on Bottle Washing Cart shelves.
4. Press **DOOR OPEN** touch pad to open doors.
5. Enter wash chamber.
6. Pull to roll Bottle Washing Cart (see Figure 4-5) into wash chamber, along guiding rails until wheels are positioned between stoppers on rails.
7. Ensure water inlet connector at bottom of wash chamber is aligned with manifold on bottle washing cart.
8. Exit wash chamber.

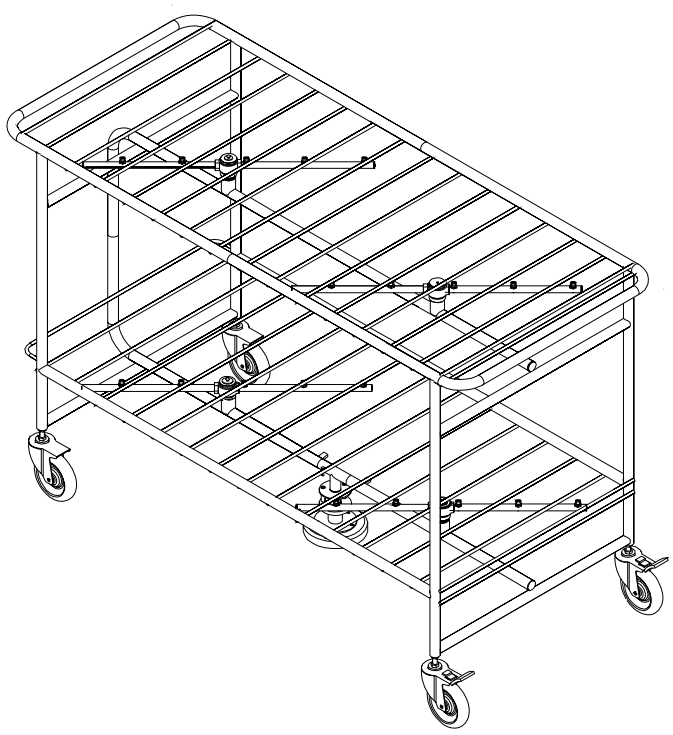


Figure 4-5. Bottle Washing Cart

4.4 Typical Cycle Operation

The Basil 5700LSR Cage and Rack Washer is pre-programmed with five processing cycles and is capable of retaining up to six additional cycles. Each one of these additional cycles can be customized to include up to seven different treatments. For instructions on programming, refer to *SECTION 5, CYCLE AND CONTROL VALUE PROGRAMMING*.

There are also two pre-programmed cycles for special purposes: a VHP cycle (Option) and a DESCALER cycle.

***IMPORTANT:** When VHP cycle (option) is present there are only five cycles available for custom needs.*

VHP cycle (Option) is used for biodecontamination purposes, refer to *SECTION 4.5, VHP CYCLE (OPTION)*.

DESCALER cycle is used for cleaning purposes, refer to *SECTION 6.3, DESCALER CYCLE*.

The following cycle description is based on pre-programmed **PRIMATES** cycle. See **Table 5-1,** *CYCLE DESCRIPTION CHART*, for default treatment values of PRIMATES cycle.

⚠ WARNING – BURN HAZARD: After pressing STOP touch pad, wait until water flow stops before opening doors. Hot water/steam may be sprayed through door opening if doors are opened too soon.

⚠ CAUTION – POSSIBLE EQUIPMENT DAMAGE: Avoid product damage. Always select a cycle appropriate for the items being processed.

1. Once washer is properly loaded as explained in *SECTION 4.3, HOW TO LOAD ACCESSORIES,* close doors.
2. In Mode Selection screen, press **DOORS CONTROL** touch pad; then, press **DOOR CLOSE** touch pad to close doors.
3. Press **X** touch pad until Mode Selection screen appears.
4. In Mode Selection screen, press **AUTOMATIC** touch pad. Control advances to Cycle Selection screen.
5. In Cycle Selection screen, select a cycle from displayed menu or press **RIGHT** arrow touch pad to access more cycle menus.

   Use **LEFT** arrow touch pad to return to previous screen.
6. When desired cycle is selected, display shows name of selected cycle. Press **START CYCLE** touch pad. Selected cycle screen remains displayed during a safety delay.
7. After safety delay has elapsed, washer automatically progresses through the following programmed treatments:

   NOTE: For cycle processing sequence, note the following:

   *1) Washer operation can be interrupted at any time by pressing **STOP** touch pad. To resume cycle, press **RESUME CYCLE** touch pad. To abort cycle, press **ABORT CYCLE** touch pad.*

   2) After washer operation has been interrupted, a 60-second delay prevents doors from opening before it is safe to do so. Operator must wait until the end of the delay before opening doors.

   3) If unit fails or if any abnormal condition occurs during a cycle, refer to SECTION 7, TROUBLESHOOTING, to identify the possible cause and corrective action.

   - **Pre-Wash:** Water from tank 2 is sprayed over load then sent directly to drain (or to Drain Cooldown Tank with water injection if option is present). Pre-wash is non-recirculated.

WARNING – BURN HAZARD: Inner surfaces of washer are very hot after cycle completion. Operator should wear appropriate personal protective equipment (PPE), including gloves and faceshield and avoid all contact with inner walls when entering chamber to unload washer.

WARNING – PERSONAL INJURY HAZARD: Cages and items in washing cart may move during processing and be filled with residual hot water or protrude from cart at the end of the cycle. Always wear appropriate Personal Protective Equipment (PPE) and carefully remove cages and items from cart.

WARNING – SLIPPING HAZARD: To prevent slips, keep floor dry. Promptly clean up any spills or drippage. If spills or drippage are detergents or other chemicals, follow safety precautions and handling procedures set forth on detergent or chemical label and/or Material Safety Data Sheet (MSDS).

- **Wash 1:** Load is washed with heated detergent solution from tank 1.
- **Rinse:** Water from tank 2 is sprayed over load and sent directly to drain (or to Drain Cooldown Tank with cold water injection if option is present). Rinse is non-recirculated.
- **Wash 2 (Option):** Load is washed with heated detergent solution from tank 3.
- **Rinse:** Water from tank 2 is sprayed over load then sent directly to drain (or to Drain Cooldown Tank with cold water injection if option is present). Rinse is non-recirculated.
- **Final Rinse:** Load is rinsed with heated water from tank 2.

  NOTE: For Final Rinse treatment sequence, note the following:

  1) Final Rinse phase timer starts only when temperature set point is reached.

  2) Final Rinse water is pre-heated during Rinse treatment only if Rinse treatment is not performed previously.
- **Vapor Exhaust:** Residual vapor is removed from chamber.
- **Drying (Option):** Wash chamber is dried from any remaining water from a previous washing cycle. Wash chamber is dried with hot non-recirculated air.

When cycle is completed, buzzer sounds and display shows:

CYCLE COMPLETE

Instruction remains on screen until door is opened.
Printer records:

CYCLE COMPLETE HH:MM:SS

MAX WASH TEMP= XX.X°C
MAX RINSE TEMP= XX.X°C
CYCLE TIME= HH:MM:SS

***IMPORTANT:** When cycle is completed, door must be opened and then closed before another cycle may be started.*

8. Open chamber door by pressing **DOOR OPEN** touch pad on cycle Complete Screen.
9. Leave door open and allow load to cool before removing accessory headers. Display returns to Mode Selection screen.

   ***IMPORTANT:** At the end of a work session, washer should be completely drained. See SECTION 4.12, DRAIN CYCLE.*

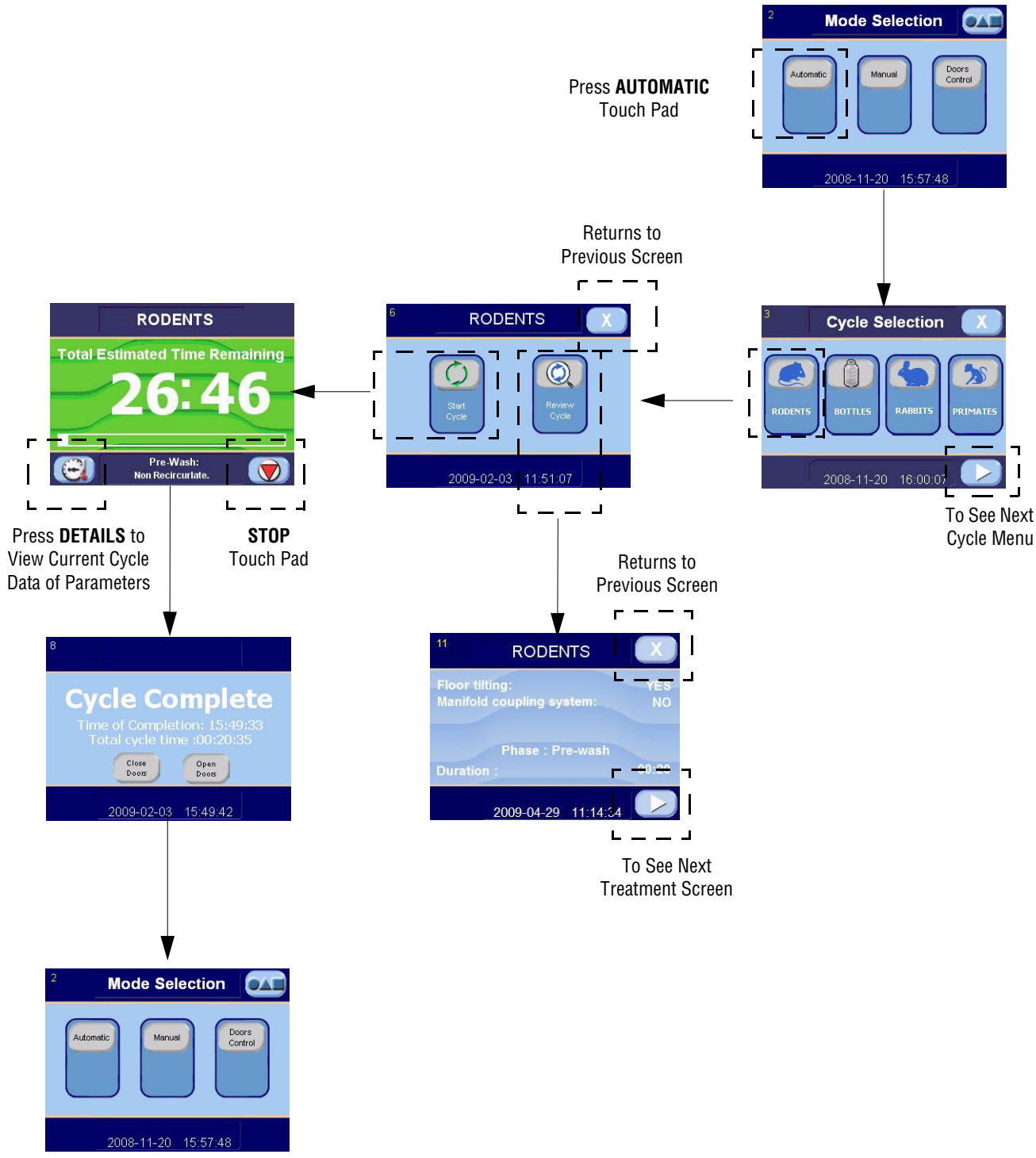


Figure 4-6. Cycle Operation Flowchart (Typical)

4.5 VHP Cycle (Option)

If VHP Ready System option is present, cycle 11 will be VHP cycle. VHP cycle is used for biodecontamination purposes.

The following cycle description is based on pre-programmed VHP cycle. See **Table 5-1**, Cycle Description Chart, for default treatment values of VHP cycle.

⚠ WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Ensure wash chamber is completely dry before processing a VHP cycle.

⚠ CAUTION – POSSIBLE EQUIPMENT DAMAGE:

- **Remove any items, accessories or racks from wash chamber before processing a drying treatment prior to a VHP cycle. Items will be damaged by high temperature drying.**
- **Items processed in the washer must tolerate temperatures and chemicals specified in this manual. Always follow item manufacturer's recommendations for cleaning instructions.**

1. Unload washer from any items and rack.
2. In Mode Selection screen, press **DOORS CONTROL** touch pad; then, press **DOOR CLOSE** touch pad to close doors.
3. Press **X** touch pad until Mode Selection screen appears.
4. In Mode Selection screen, press **AUTOMATIC** touchpad. Control advances to Cycle Selection screen.
5. In Cycle Selection screen, press **RIGHT** arrow until VHP icon appears. Press **VHP** touchpad. Display advances to VHP screen.
6. In VHP screen, press **START CYCLE** touchpad.
   - **If Drying option is present**, display shows:

IMPORTANT: *Remove heat sensitive items from wash chamber before performing a Drying treatment.*

a. Press **OPEN LOAD DOOR** to unload wash chamber if necessary. Press **OK** touchpad.

b. After safety delay a Drying treatment starts. Wash chamber is dried with hot non-recirculated air.

c. At the end of treatment, press **OPEN LOAD DOOR** and load wash chamber if necessary.

d. Once the washer is properly loaded, press **CLOSE LOAD DOOR** to close door.

e. Press **OK** touch pad.

- **If no Drying option**, VHP Cycle can be performed after a Vapor exhaust treatment.

  IMPORTANT: *Ensure wash chamber is completely dry before performing VHP cycle.*

Display shows:

7. Washer automatically progresses through the following programmed treatments :

   IMPORTANT: *VHP exhaust maintains a slightly negative pressure inside wash chamber during VHP cycle.*

   a. **Dehumidification Phase:** Dry, HEPA-filtered (High Efficiency Particulate Air) air is circulated to reduce humidity to a predetermined level in the 10-60% relative humidity range. This permits the necessary target Vaprox H2O2 vapor concentration to be maintained below saturation (dew point) levels during the Condition and Biodecontamination phases. The internal HEPA filter prevents contamination of internal machine components.

      NOTE: Time to reach targeted humidity corresponds with the initial humidity, temperature and volume of wash chamber.

   b. **Condition Phase:** Flow of dry, HEPA-filtered air continues while Vaprox vapor is injected into the air stream just before it leaves the unit. The Vaprox sterilant injection rate is controllable in the 2.0 to 12.0 grams per minute range. Condition time is affected by sterilant injection rate, wash chamber contents and temperature.

   c. **Biodecontamination Phase:** Target VHP antimicrobial concentration is maintained for a specific period of time throughout wash chamber. Refer to Vaprox label and package insert for more information.

   d. **Aeration Phase:** Vaprox H2O2 vapor injection is stopped and:

      - **VHP® 1000 - ARD Generator** – Recirculating flow of dry, HEPA-filtered air continues through catalytic converter to reduce H2O2 vapor concentration within wash chamber.
      - **M100 - ABX Single Pass Generator** – VHP option washer's exhaust fan force the VHP out of wash chamber through a catalytic converter installed on washer to reduce H2O2 vapor concentration inside wash chamber.

8. When cycle is completed, buzzer sounds and display shows:

   CYCLE COMPLETE.

9. Open chamber door by pressing **DOOR OPEN** touch pad on Cycle Complete screen. Display returns to mode Selection screen.

4.6 Review Cycle Values

The Review mode allows operator to view the current settings of each programmable treatment value for the specific cycle selected. Once cycle is selected, press **REVIEW CYCLE** touch pad. Screen will display each treatment parameters sequentially as requested when pressing **RIGHT** arrow touch pad.

*NOTE: The Review Cycle sequence can be aborted at any point by pressing **X** touch pad until cycle screen appears.*

4.7 Pause a Cycle

If operator, for any reason, needs to pause a cycle, washer operation can be halted at any time by pressing **STOP** on touch screen. Once interrupted, cycle either can be resumed or aborted (see Figure 4-7).

1. To pause a cycle in progress, press **STOP** on touch screen. Display shows:

   RESUME OR ABORT CYCLE?

2. Press **RESUME CYCLE** on touch screen to resume cycle. Cycle resumes at beginning of phase where cycle was interrupted.

4.8 Abort a Cycle

If cycle needs to be aborted for any reason, proceed as follows:

Press **STOP** on touch screen. Display shows:

RESUME OR ABORT CYCLE?

Press **ABORT CYCLE** on touch screen.

WARNING – BURN HAZARD: After pressing STOP touch pad, wait until water flow stops before opening doors. Hot water/steam may be sprayed through door opening if doors are opened too soon.

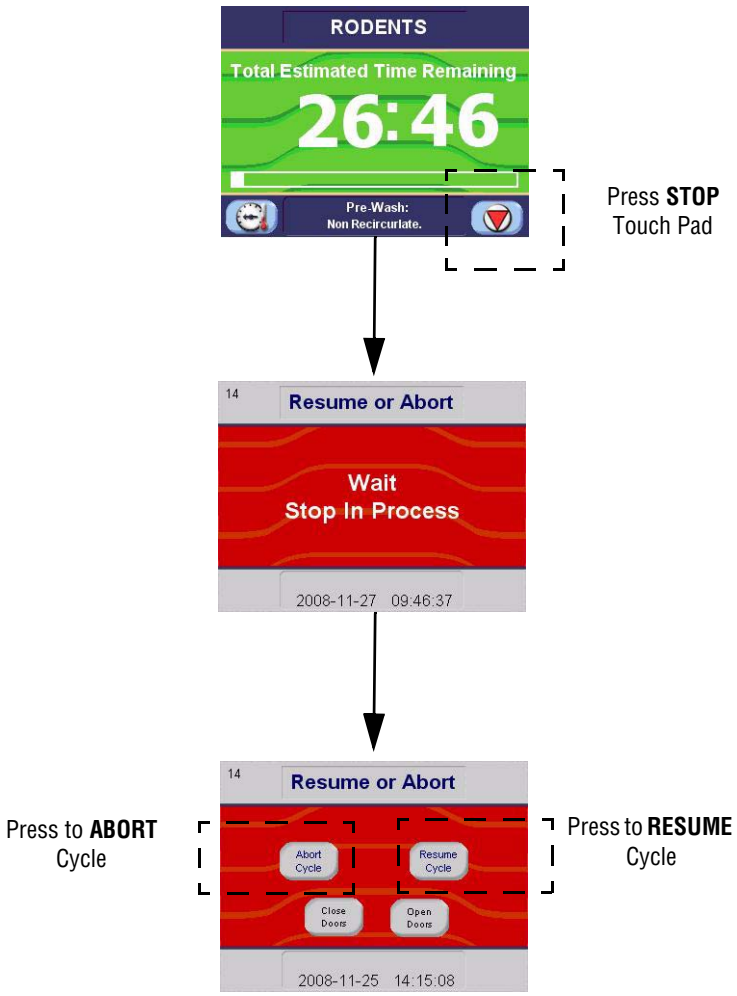


Figure 4-7. Resume or Abort a Cycle

4.9 Responding to an Alarm

Alarm messages warn operator washer is experiencing an abnormal condition. Fault conditions can be caused by failure of utility supplies or by washer components.

Refer to *SECTION 7, TROUBLESHOOTING*, for a detailed listing of fault alarms.

NOTE: Some fault conditions can be solved by operator.

⚠ WARNING – BURN HAZARD: Inner surfaces of washer are very hot after cycle completion. Operator should wear appropriate personal protective equipment (PPE), including gloves and faceshield and avoid all contact with inner walls when entering chamber to unload washer.

When a malfunction or fault occurs before cycle is successfully completed, an alarm sounds and display shows:

(Typical Alarm Message)

Printer message is:

ALARM

YYYY/MM/DD HH:MM

ALARM NAME

1. Press **SILENCE BUZZER** on touch screen to silence buzzer.

   or:

2. Press **ACK** touch pad on touch screen to acknowledge alarm and silence buzzer. This records time at which operator acknowledged alarm.

   Printer message is:

   ALARM ACKNOWLEDGED HH:MM

3. If **FAULT** alarm requires no further action, or if operator has been able to solve fault condition using *SECTION 7, TROUBLESHOOTING*, press **RESUME CYCLE** on touch screen to resume cycle operation. Cycle resumes at beginning of phase where cycle was interrupted. Display shows:

   CYCLE RESUMED HH:MM:SS

4. If **FAULT** alarm requires to abort cycle, press **ABORT CYCLE** on touch screen to abort cycle. Display shows:

   CYCLE ABORTED HH:MM:SS

4.10 Shutdown

There is no Shutdown mode on the Basil 5700LSR Cage and Rack Washer. Washer should remain **ON** at all times except when performing maintenance or repairs, then operator needs to lockout/tagout main electrical disconnect switch to **OFF** position.

4.11 Purge Travelers

Travelers can be PURGED after cleaning wash chamber spray headers or whenever necessary.

1. In Mode Selection screen, press **MANUAL** touch pad.
2. In Manual screen, press **PURGE TRAVELERS** touch pad. Purge starts.

   NOTE: Purging travelers also purges Rinse Tank (tank 2). Perform purge before draining tanks.
3. Once purge finishes, press **X** touch pad until Mode Selection screen appears.

4.12 Drain Cycle

DRAIN cycle can be performed whenever necessary:

- After processing a heavily soiled load to evacuate reused water from wash tank(s);
- between different load types (debris pans or feeder bottles, for example) to evacuate reused water from wash tank(s);
- after cleaning wash chamber to rinse off cleaning solution.

***IMPORTANT:** At the end of a work session, washer should be completely drained.*

1. In Mode Selection screen, press **MANUAL** touch pad.
2. In Manual screen, press **DRAIN** touch pad.
3. In Drain screen, press the name of desired tank to drain.

   NOTE: It is possible to drain one tank only or select all tanks at once. In this case, draining will be performed consecutively.
4. Press **X** touch pad to return to Manual Mode screen.

4.13 Power Failure

If a power failure occurs and there is no accessory rack in washer, when power is restored display shows Mode Selection screen. If a cycle was in progress, this one should be restarted from the beginning. See *SECTION 4.13.2, RESUMING CYCLE AFTER A POWER FAILURE*.

If power failure occurs when doors are closing or opening, doors will stop action and will open or close slowly.

4.13.1 Opening Doors During a Power Failure

If it is necessary to open doors during a power failure, wear appropriate Personal Protective Equipment (PPE) such as waterproof gloves, eye protection and apron and proceed as follows:

1. Lock building electrical supply disconnect switch in **OFF** position.
2. Press Emergency Stop pushbutton.
3. Enter service area and pull safety latch (located on door counterweight guide) door will open slowly.
4. Unload accessories from chamber.

   NOTE: If operator is inside wash chamber during a power failure, and door closes, it is also possible to open door chamber (refer to SECTION 4.14, OPENING DOORS AFTER EMERGENCY FEATURES WERE ACTIVATED).
5. Unlock building electrical supply disconnect switch and place in **ON** position.
6. Place Safety latch into vertical position.
7. When power is restored, accessories must be reprocessed through a complete cycle. See *SECTION 4.13.2, RESUMING CYCLE AFTER A POWER FAILURE*, for procedure on how to restart a cycle.

⚠ WARNING – PERSONAL INJURY HAZARD:

- **Always verify flap door sill is down before entering wash chamber.**
- **If cycle has not been completed, contaminated debris or water may remain in the bottom of wash chamber.**

4.13.2 Resuming Cycle After a Power Failure

If power failure occurs when unit has not completed a cycle, once power is restored, reinitialize washer as follows:

1. Turn **LOCK/UNLOCK/INIT** key switch (located on load control panel and unload side control panel) to **INIT** position. Display shows Mode Selection screen.

   ***IMPORTANT:** If Safety latch was raised, return Safety latch into position before initializing washer.*
2. Start cycle from the beginning.

4.14 Opening Doors After EMERGENCY Features Were Activated

If emergency stop cables were pulled by a person trapped inside wash chamber, power was shut off from the unit. Perform the following steps to open doors:

1. Pull down Safety latch, located inside wash chamber.
2. Door will be depressurized and will open slowly. Exit wash chamber.
3. Resume washer operation as explained in *SECTION 4.15, RESUMING WASHER OPERATION AFTER EMERGENCY FEATURES WERE ACTIVATED*.

4.15 Resuming Washer Operation After EMERGENCY Features Were Activated

***IMPORTANT:** If Safety latch was pulled, return Safety latch into position before resuming washer operation.*

1. Turn **LOCK/UNLOCK/INIT** key switch (located on load control panel and unload side control panel) to **INIT** position. Display shows Mode Selection Screen.
2. In Mode Selection screen, press **DOORS CONTROL**.
3. Press **DOOR CLOSE** touch pad on load or unload side control panel, depending on which door was open.
4. Press **X** touch pad until Mode Selection appears.
5. In Mode Selection screen, press **AUTOMATIC** touch pad. Cycle Selection screen appears.
6. Press on desired cycle touch pad to start cycle from the beginning.

CYCLE AND CONTROL VALUE PROGRAMMING 5

IMPORTANT: *A listing of the Safety Precautions to be observed when operating this Cage and Rack Washer can be found in SECTION 1. Do not operate equipment until you have become familiar with this information.*

5.1 General

PLC control of the **Basil® 5700LSR Cage and Rack Washer** allows adjustment of programmed cycles and creation of new cycles. Using this feature, cycles may be customized to process different types of loads.

The washer is preprogrammed with five basic cycles: RODENTS, BOTTLES, RABBITS, PRIMATES and FAST. These cycles are programmed with default treatments and treatment values.

Control is also capable of storing parameters for up to six custom cycles. In addition to these eleven programmable cycles, there is a VHP cycle (option) used for biodecontamination purposes. There is also a DESCALER preprogrammed cycle that cannot be modified, used for maintenance purposes.

IMPORTANT: *When VHP cycle is present, there are only five cycles available for custom needs.*

Table 5-1 summarizes the cycle default values, treatment parameters and possible parameters for customized cycles.

TAG #	CYCLE NAME	PARAMETERS	PRE-WASH	WASH 1	MID-RINSE
1	RODENTS	RECIRCULATION TYPE	NON-RECIRCULATED	RECIRCULATED	NON-RECIRCULATED
		TIME	00:35	02:00	00:35
		TEMPERATURE	------	130°F (54°C) NON-GUARANTEED	------
		TANK SELECTION / FLOOR TILTING	RINSE	ALKALINE	RINSE
		INJECTION RATE	------	1 oz/gal (8 ml/l)	------
		WATER PORT	HW	HW	HW
		TANK SAVE RATE	------	85%	------
2	BOTTLES (MANIFOLD COUPLING ACTIVATED)	RECIRCULATION TYPE	NON-RECIRCULATED	RECIRCULATED	NON-RECIRCULATED
		TIME	00:35	02:00	00:35
		TEMPERATURE	------	130°F (54°C) NON-GUARANTEED	------
		TANK SELECTION / FLOOR TILTING	RINSE	ALKALINE	RINSE
		INJECTION RATE	------	1 oz/gal (8 ml/l)	------
		WATER PORT	HW	HW	HW
		TANK SAVE RATE	------	85%	------
3	RABBITS	RECIRCULATION TYPE	NON-RECIRCULATED	RECIRCULATED	NON-RECIRCULATED
		TIME	00:35	02:00	00:35
		TEMPERATURE	------	130°F (54°C) NON-GUARANTEED	------
		TANK SELECTION / FLOOR TILTING	RINSE	ALKALINE	RINSE
		INJECTION RATE	------	1 oz/gal (8 ml/l)	------
		WATER PORT	HW	HW	HW
		TANK SAVE RATE	------	85%	-------
4	PRIMATES	RECIRCULATION TYPE	NON-RECIRCULATED	RECIRCULATED	NON-RECIRCULATED
		TIME	00:35	06:00	00:35
		TEMPERATURE	------	130°F (54°C) NON-GUARANTEED	------
		TANK SELECTION / FLOOR TILTING	RINSE	ALKALINE	RINSE
		INJECTION RATE	------	1 oz/gal (8 ml/l)	------
		WATER PORT	HW	HW	HW
		TANK SAVE RATE	------	85%	------
5	FAST	RECIRCULATION TYPE	NON-RECIRCULATED	RECIRCULATED	NON-RECIRCULATED
		TIME	00:35	02:00	00:35
		TEMPERATURE	------	130°F (54°C) NON-GUARANTEED	------
		TANK SELECTION / FLOOR TILTING	RINSE	ALKALINE	RINSE
		INJECTION RATE	------	1 oz/gal (8 ml/l)	------
		WATER PORT	HW	HW	HW
		TANK SAVE RATE	------	85%	------
11	VHP	RECIRCULATION TYPE	------	------	------
		TIME	------	------	------
		TEMPERATURE	------	------	------
		TANK SELECTION / FLOOR TILTING	------	------	------
		INJECTION RATE	------	------	------
		WATER PORT	------	------	------
		TANK SAVE RATE	------	------	------
6 TO 11	CYCLE 6 TO 11	RECIRCULATION TYPE	NON-RECIRCULATED	RECIRCULATED	NON-RECIRCULATED
		TIME	00:35	02:00	00:35
		TEMPERATURE	------	130°F (54°C) NON-GUARANTEED	------
		TANK SELECTION / FLOOR TILTING	RINSE	ALKALINE	RINSE
		INJECTION RATE	------	1 oz/gal (8 ml/l)	------
		WATER PORT	HW	HW	HW
		TANK SAVE RATE	------	85%	------

		PHASES	DETAILS
12	DESCALER	1- DRAIN TANKS 1 & 2 AND 3 (OPTIONAL) & PIPING	
		2- FILL TANKS 1 & 2 AND 3 (OPTIONAL)	HW
		3- FILL THE SUMP WITH 1, 2 OR 3 (OPTIONAL)	DESCALER INJECTION (2 oz/gal)
		4- RECIRCULATE EACH TANK	05:00 EACH TANK AT 180°F (82°C), GUARANTEED
		5- DRAIN ALL TANKS	
		6- FILL TANKS 1 & 2 AND 3 (OPTIONAL)	HW
		7- RECIRCULATE EACH TANK	03:00 EACH TANK AT 180°F (82°C), NON-GUARANTEED
		8- DRAIN ALL TANKS	
		9- VAPOR EXHAUST	01:00

MANUAL DRAIN	1- PURGE SPRAY HEADER	
	2- DRAIN ALL TANKS	

ADJUSTABLE PARAMETERS RANGE

TAG #	CYCLE NAME	PARAMETERS	PRE-WASH	WASH 1	MID-RINSE
1 TO 11	8 ALPHANUMERIC CHARACTERS (MANIFOLD COUPLING ACTIVATED OR NOT)	RECIRCULATION TYPE	NON-RECICULATED	RECICULATED	NON-RECICULATED
		TIME	00:00 or 00:35	00:00 to 10:00	00:00 or 00:35
		TEMPERATURE	------	120°F TO 165°F (49°C to 74°C) NON-GUARANTEED	------
		TANK SELECTION / FLOOR TILTING	RINSE	ALKALINE OR ACID	RINSE
		INJECTION RATE	------	0 to 4 oz/gal (0 to 32 ml/l)	------
		WATER PORT	HW	HW	HW
		TANK SAVE RATE	------	0% to 85%	------

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Note 1: 03:00 without drying system option

Note 2: 03:00 to 60:00 without drying system option

Table 5-1. Cycle Description Chart – Basil 5700 LSR Cage and Rack Washer

TAG #	WASH 2 (OPTIONAL)	RINSE	FINAL RINSE	PURE WATER RINSE	DRYING (OPTIONAL) or VAPOR EXHAUST
1	RECIRCULATED	NON-RECIRCULATED	RECIRCULATED	NON-RECIRCULATED	------
	02:00	00:35	03:00	00:35	15:00
	160°F (71°C) NON-GUARANTEED	------	185°F (85°C) GUARANTEED	185°F (85°C)	MAXIMUM 212°F (100°C)
	ACID	RINSE	RINSE	RINSE	FLOOR NOT TILTED
	2 oz/gal (16 ml/l)	------	------	------	------
	HW	HW	HW	PW	------
	85%	------	85%	85%	------
2	RECIRCULATED	NON-RECIRCULATED	RECIRCULATED	NON-RECIRCULATED	------
	02:00	00:35	03:00	00:35	15:00
	160°F (71°C) NON-GUARANTEED	------	185°F (85°C) GUARANTEED	185°F (85°C)	MAXIMUM 212°F (100°C)
	ACID	RINSE	RINSE	RINSE	FLOOR NOT TILTED
	2 oz/gal (16 ml/l)	------	------	------	------
	HW	HW	HW	PW	------
	85%	------	85%	85%	------
3	RECIRCULATED	NON-RECIRCULATED	RECIRCULATED	NON-RECIRCULATED	-
	08:00	00:35	02:00	00:35	10:00
	160°F (71°C) NON-GUARANTEED	------	185°F (85°C) GUARANTEED	185°F (85°C)	MAXIMUM 212°F (100°C)
	ACID	RINSE	RINSE	RINSE	TILTED FLOOR
	2 oz/gal (16 ml/l)	------	------	-	------
	HW	HW	HW	PW	------
	85%	------	85%	85%	------
4	RECIRCULATED	NON-RECIRCULATED	RECIRCULATED	NON-RECIRCULATED	------
	06:00	00:35	02:00	00:35	10:00
	160°F (71°C) NON-GUARANTEED	------	185°F (85°C) GUARANTEED	185°F (85°C)	MAXIMUM 212°F (100°C)
	ACID	RINSE	RINSE	RINSE	TILTED FLOOR
	2 oz/gal (16 ml/l)	------	------	------	------
	HW	HW	HW	PW	------
	85%	------	85%	85%	------
5	RECIRCULATED	NON-RECIRCULATED	RECIRCULATED	NON-RECIRCULATED	------
	02:00	00:35	01:00	00:35	01:00 (see note 1)
	160°F (71°C) NON-GUARANTEED	------	185°F (85°C) NON-GUARANTEED	185°F (85°C)	MAXIMUM 212°F (100°C)
	ACID	RINSE	RINSE	RINSE	FLOOR NOT TILTED
	2 oz/gal (16 ml/l)	------	------	------	------
	HW	HW	HW	PW	------
	85%	------	85%	85%	------
11	------	------	------	------	------
	------	------	------	------	60:00
	------	------	------	------	MAXIMUM 212°F (100°C)
	------	------	------	------	FLOOR NOT TILTED
	------	------	------	------	------
	------	------	------	------	------
	------	------	------	------	------
6 TO 11	RECIRCULATED	NON-RECIRCULATED	RECIRCULATED	NON-RECIRCULATED	------
	02:00	00:35	01:00	00:35	01:00
	160°F (71°C) NON-GUARANTEED	------	185°F (85°C) GUARANTEED	185°F (85°C)	MAXIMUM 212°F (100°C)
	ACID	RINSE	RINSE	RINSE	FLOOR NOT TILTED
	2 oz/gal (16 ml/l)	------	------	------	------
	HW	HW	HW	PW	------
	85%	------	85%	85%	------

LEGEND

HW	HOT WATER
PW	PURE WATER
GUARANTEED	TIMER ELAPSE ONLY WHEN ABOVE SET TEMPERATURE
NON-GUARANTEED	TIMER STARTS WHEN PUMP RUNS
	SELECTED
	NOT SELECTED
------	NOT APPLICABLE / NOT SELECTABLE

TAG #	WASH 2 (OPTIONAL)	RINSE	FINAL RINSE	PURE WATER RINSE	DRYING (OPTIONAL) or VAPOR EXHAUST
1 TO 11	RECICULATED	NON-RECICULATED	RECICULATED	NON-RECICULATED	------
	00:00 to 10:00	00:00 or 00:35	00:00 to 08:00	00:00 or 00:35	01:00 to 60:00 (see note 2)
	120°F TO 165°F (49°C to 74°C) NON-GUARANTEED	------	160°F TO 185°F (71°C to 85°C) GUARANTEED or NON-GUARANTEED	110°F TO 185°F (43°C to 85°C)	MAXIMUM 212°F (100°C)
	ACID OR ALKALINE	RINSE	RINSE	RINSE	TILTED FLOOR OR NOT
	0 to 4 oz/gal (0 to 32 ml/l)	------	------	------	------
	HW	HW	HW	PW	------
	0% TO 85%	------	0% or 85%	0% or 85%	------

Table 5-1. Cycle Description Chart – Basil 5700 LSR Cage and Rack Washer (Cont'd)

5.2 Supervisor Mode

Supervisor mode access is secured by a password.

5.2.1 Accessing Supervisor Mode

To access Supervisor mode, proceed as follows:

1. On Mode Selection screen, press **OPTIONS** touch pad.
2. On Options screen, press **SUPERVISOR MODE** touch pad. A numeric keyboard appears.
3. Enter appropriate password (supervisor and service user can access Supervisor Mode).
4. Press **ENTER** touch pad.

   NOTE: If password entered is wrong, display shows USERNAME OR PASSWORD NOT RECOGNIZED, PLEASE TRY AGAIN.
5. Display advances to first Supervisor Mode screen.

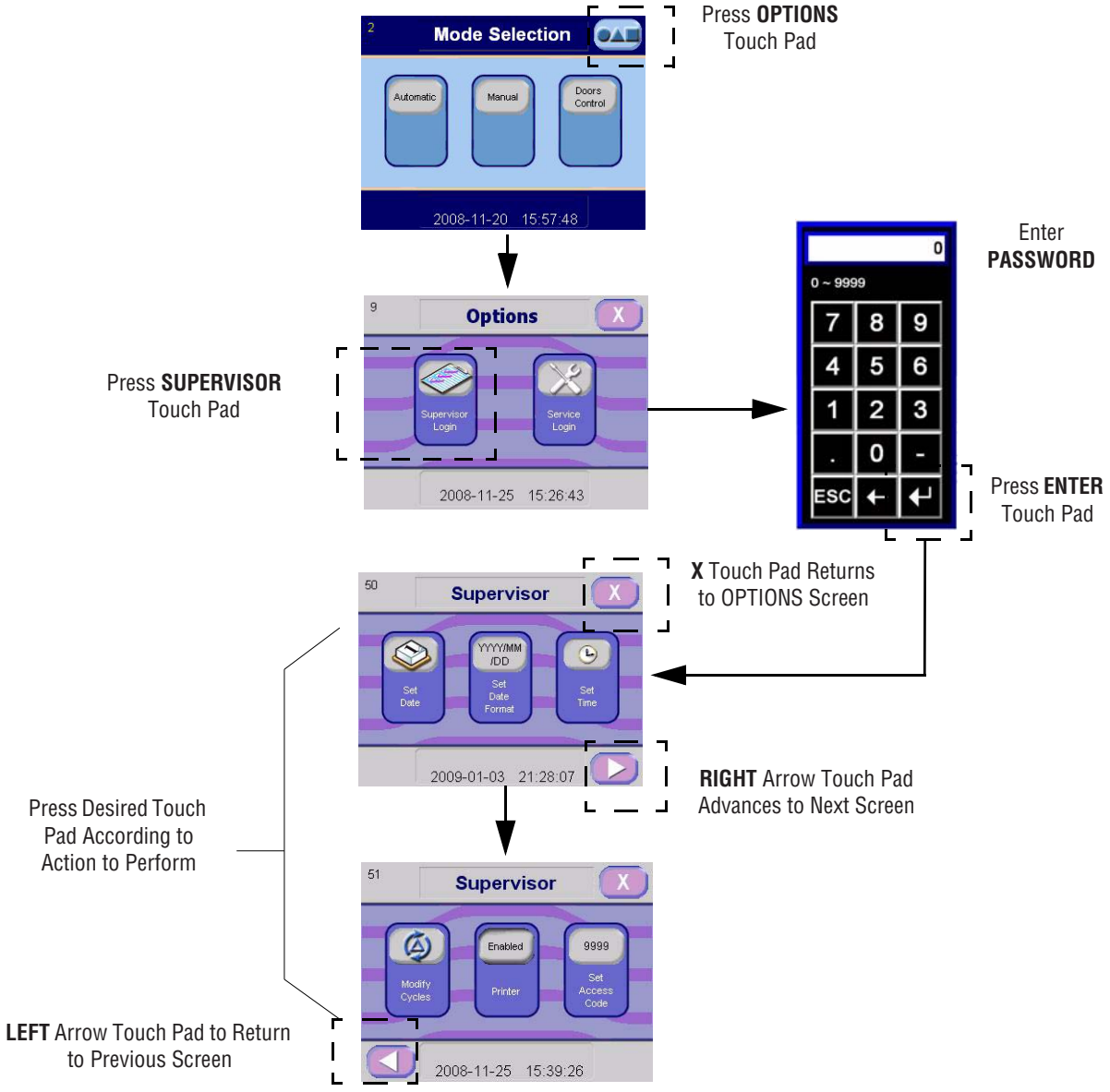


Figure 5-1. Supervisor Mode Flowchart

5.2.2 Supervisor Mode Menus

Supervisor mode includes the following menus:

- **Set Date:** Press this touch pad to set washer date.

  When pressing touch pad Set Date screen appears. Press appropriate touch pad to modify date, a numeric key board appears. Enter date value and press **ENTER** on numeric key board when ready. Press **OK** button when desired date is set. Screen returns to Supervisor screen.

- **Set Date Format:**

  Press this touch pad to select date format (YYYY/MM/DD, MM/DD/YYYY or DD/MM/YYYY). Press **OK** button when desired date format is set.

- **Set Time:** Press this touch pad to set actual time.

  When pressing touch pad Set Time screen appears. Press appropriate touch pad to modify hours, minutes or seconds. A numeric key board appears. Enter time value and press **ENTER** on numeric key board when ready. Press **OK** button when desired time is set. Screen returns to Supervisor screen.

- **Modify Cycles:** (see *SECTION 5.2.3, MODIFY CYCLES*)

  To create customized cycles and modify customized and preprogrammed cycles:

  - To modify cycle name icons;
  - To modify cycle phase parameters;
  - To reset cycle default parameters.

- **Printer:**

  To enable or disable printer. When printer is enabled, it is possible to generate printouts for current cycle parameters.

- **Set Access Code:**

  To set or modify supervisor access code. When pressing touch pad, a numeric keyboard appears. Enter a four digit access code. Press **ENTER** on numeric key board when ready. Screen returns to Supervisor screen.

5.2.3 Modify Cycles

Modify Cycles touch pad is used to modify preprogrammed or customized cycles.

Cycle modifications include phases, phase parameters, cycle names and cycle icons (see *SECTION 5.2.4, CYCLE MODIFICATION*).

See **Table 5-1**, *CYCLE DESCRIPTION CHART,* for treatments and values available.

NOTE: While scrolling through screens and menus, note the following:

1) Refer to SECTION 3.2, OPERATOR TERMINAL, for complete touch pads description.

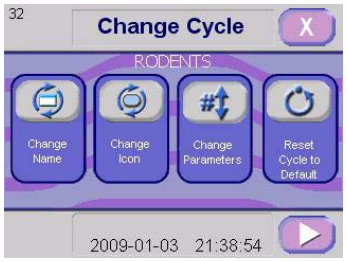
2) Pressing **X** *touch screen cancels modification and returns to previous screens.*

3) Pressing ***OK*** *on touch screen saves modification and returns to previous level screens (OK touch pad is only present on last menu, press RIGHT arrow touch pad to reach last menu).*

5.2.4 Cycle Modification

To modify a preprogrammed or customized cycle, proceed as follows:

1. Access Supervisor Mode as explained in *SECTION 5.2.1, ACCESSING SUPERVISOR MODE*. Display shows Supervisor Mode screen.
2. Press **MODIFY CYCLES** on touch screen. Display shows Choose a Cycle screen.
3. Select and press appropriate cycle to modify. (***Rodents*** cycle is used as example). Display shows Change Cycle screen:



Change Cycle Name – Press this touch pad to change cycle name.
Use Numeric keyboard appearing to enter desired cycle name. Maximum 8 characters.
Once finished, press **ENTER** arrow in numeric keyboard. Display returns to Change Cycle screen.

Change Icon – Press this touch pad to change cycle icon.
Choose an icon among the proposed icons (press **RIGHT** arrow to advance screen to next icon screen to see more icons).
Press on desired cycle icon; then, press **OK** touch pad to confirm selection. Display returns to Change Cycle screen.

Change Cycle Parameters – Press this touch pad to modify cycle parameters. See *SECTION 5.2.5, MODIFYING CYCLE PARAMETERS*.

Reset Cycle to Default – Press this touch pad to restore default values:

Cycle name is reset;
Icon is changed back to factory selection;
All treatments parameters (recirculation time, temperature set point, chemical concentration, drain percentage saved, floor tilt and manifold coupling are reset to "NO", tank selection names are reset to factory default values).

Print Cycle – Press this touch pad to print cycle values for the selected cycle. Printing screen appears. Press **PRINTING** touch pad to obtain a printout. Once impression is made, screen returns to Print Cycle screen.

NOTE: This touch pad is only available if printer is enabled. See SECTION 5.2.2, SUPERVISOR MODE MENUS, for enabling/disabling printer.

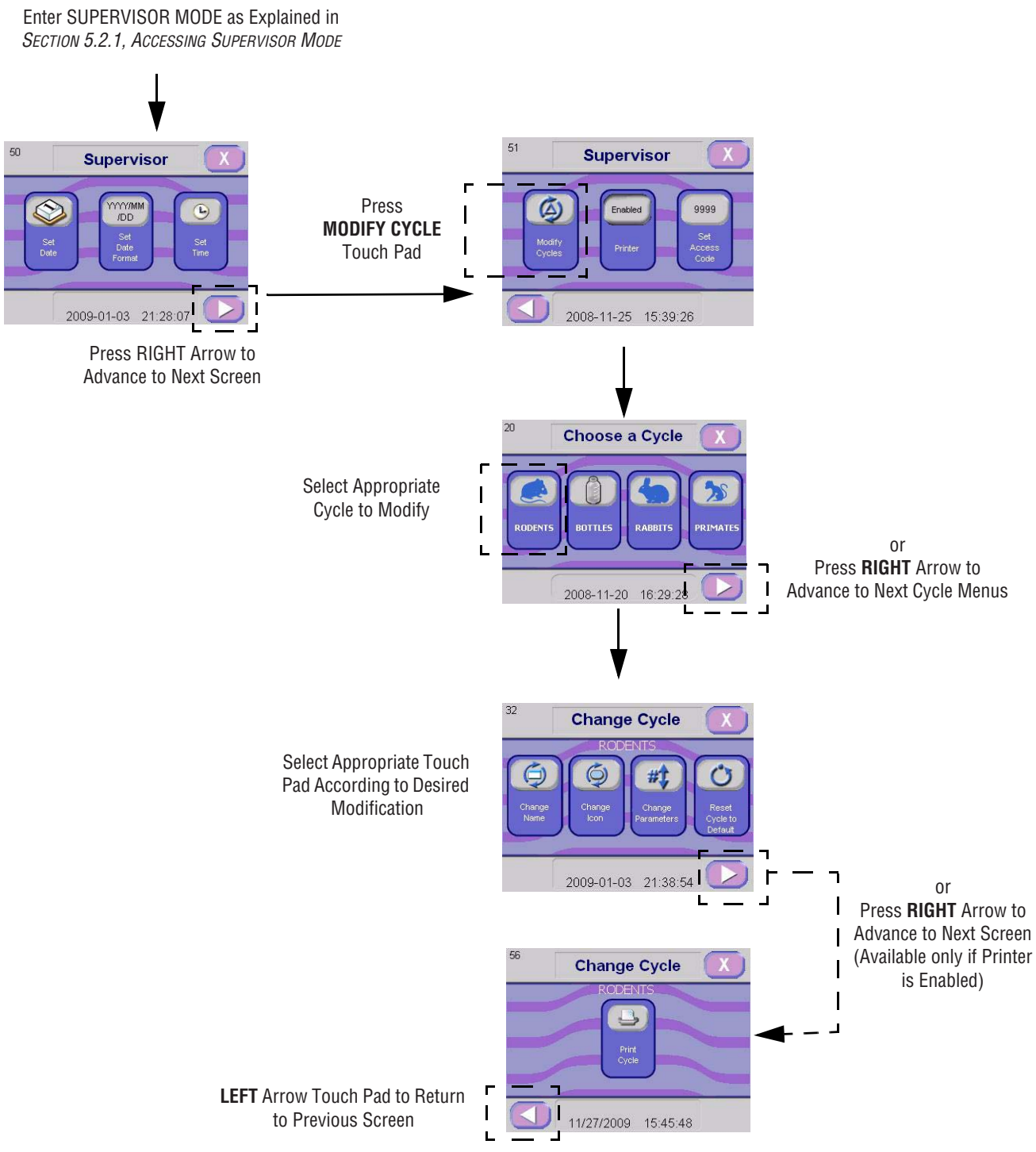


Figure 5-2. Modifying a Cycle Flowchart

5.2.5 Modifying Cycle Parameters

It is possible to modify a preprogrammed or a customized cycle to adjust to Customer needs. See **Table 5-1**, *CYCLE DESCRIPTION CHART*, for default values and treatment parameters.

NOTE: When modifying cycle parameters, take note of the following:

1) *Modifications must be done treatment by treatment in a sequential order.*
2) *Left and right arrow touch pads allow scrolling through current treatment parameters.*
3) *Numeric key pads appear when a numeric entry is necessary.*
4) *Press **ENTER** in numeric keyboard to confirm entry.*
5) *Pressing **X** touch pad allows to cancel modification of current treatment and returns to change cycle screen. Parameter can be changed by pressing corresponding touch pad.*
6) *Once all modifications to a treatment have been made, press **OK** touch pad to save modifications and advance to next treatment.*

1. Enter Supervisor Mode as explained in *SECTION 5.2.1, ACCESSING SUPERVISOR MODE*.
2. Follow Modifying a Cycle sequence until screen shows Change Cycle screen.
3. Press **CHANGE CYCLE PARAMETERS** touch pad, Miscellaneous screen appears.

   NOTE: There are three Miscellaneous screens, according to options selected.
4. Press **OK** button. Screen advances to the first cycle treatment.
5. Once modifications to treatment are finished, screen advances to next treatment available.

   Touch pads on screens appear according to parameter to be modified:

- **Duration** touch pad – to modify or establish treatment duration time, in minutes and/or seconds.

- **Temperature** touch pad – to select treatment water temperature (showed in C or F, according to setting).

- **Injection Rate** touch pad – every time touch pad is pressed injection rate is increased by 1 ml [1/8 oz/gal].

- **Tank** touch pad – to select Alkaline (tank 1) or Acid (tank 3) tank to be used in treatment. Once tank is selected press **RIGHT** arrow to establish Drain Percentage Saved.

- **Temperature Guaranteed** touch pad – to establish Yes or No Water temperature must be guaranteed.

- **Re-Use Water/Pure Wate**r touch pad – to establish if water from final rinse or pure water treatment should be re-used for next pre-wash treatment.

  NOTE: If pure water is re-used for Pre-Wash treatment of next cycle, then final rinse water re-use option is automatically set to "NO".

6. Once cycle modifications finished, press **OK** button, display returns to Choose a Cycle screen.

   Press **X** touch pad until screen returns to Mode Selection screen.

   or

   Repeat procedure for next cycle to be modified.

ROUTINE MAINTENANCE

6

IMPORTANT: *A listing of the Safety Precautions to be observed when operating this Cage and Rack Washer can be found in SECTION 1. Do not operate equipment until you have become familiar with this information.*

WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD:

- **Regularly scheduled preventive maintenance, in addition to faithful performance of minor maintenance described in this manual, is required for safe and reliable operation of this equipment. Contact STERIS to schedule preventive maintenance.**
- **Only STERIS or STERIS-trained service personnel should make repairs or adjustments to this equipment. Maintenance done by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate warranty or result in costly damage. Contact STERIS regarding service options.**

WARNING – ELECTRIC SHOCK HAZARD:

- **Always set building electrical-supply disconnect switch and console master power switch to OFF before performing any preventive maintenance functions within the compartments. Electrical shock can cause serious injury.**
- **Disconnect all utilities to washer before servicing. Do not service washer unless all utilities have been properly locked out. Always follow local occupational health and safety regulations, as well as electric and plumbing codes.**

Maintenance procedures described in this section should be performed regularly at intervals indicated. Indicated frequencies are minimums and should be increased with increased use of equipment.

If a problem occurs, refer to *SECTION 7, TROUBLESHOOTING*. A sample maintenance record is included in this Section, **Table 6-1**, which should be used as a guide for the frequency of maintenance. Such a record will prove useful in helping ensure proper maintenance. Refer to *Maintenance Manual* (764333-606) for replacement parts list.

Close attention should be paid to conditions in operating environment which will affect frequency of some maintenance procedures indicated (e.g., mineral content of water supply, washer usage).

WARNING – BURN HAZARD: Before performing any service on unit, wait until chamber and piping cool to room temperature.

6.1 Preventive Maintenance Schedule

The following guide should be used to properly maintain washer. These procedures should be carried out only by qualified service technicians. Certain procedures need to be completed by STERIS, noted by a star (*), contact STERIS when service is required. Preventive maintenance is not covered under warranty.

Table 6-1. Preventive Maintenance Guide

Recommended frequency of inspection is indicated in the right column. Usage and utility conditions may require more or less frequent inspections.		**Suggested Frequency**
1.0	**PREPARATION FOR PREVENTIVE MAINTENANCE**	
1.1	Discuss equipment operation with department personnel.	6x/yr
1.2	If required, install test equipment.	A/R
1.3	When required by procedure, shut off all building services and drain all lines. Use Lockout-Tagout practices when servicing equipment. Always follow local occupational health and safety regulations, as well as electric and plumbing codes.	A/R
1.4	Verify equipment disconnect device is within easy reach and accessible to operator at all times.	Every inspection
2.0	**PRINTER AND PLC CONTROL**	
2.1	Inspect printer for proper operation.	6 x/y
2.2	Replace printer as required.*	A/R
2.3	Verify paper takeup is working properly.	6 x/yr
2.4	Check printout for darkness, missing dots, etc.	3 x/yr
2.5	Verify proper date and time are displayed; if not, reset.	6 x/yr
2.6	Inspect touchscreens for proper operation.	3 x/yr
2.7	Replace PLC battery as required.*	A/R
3.0	**DOOR ASSEMBLY**	
3.1	Inspect door for ease of operation.	6 x/yr
3.2	Inspect condition of door gasket for wear - Replace gasket if necessary.*	12 x/yr
3.3	Inspect Safety latch for proper operation.	6 x/yr
3.4	Verify operation of interlock system - Adjust if necessary.	1 x/yr
4.0	**CHAMBER COMPONENTS**	
4.1	Inspect sump filters in bottom of wash chamber - Clean if necessary.	Every day
4.2	Inspect traveler spray headers for clogged holes - Clean if necessary.	2 x/week
4.3	Remove hard water deposits from interior of chamber (use DESCALER cycle).	Every week
** Contact STERIS for this service. Service charges may be incurred. Consult your warranty for details.*		

Table 6-1. Preventive Maintenance Guide (Cont'd)

Recommended frequency of inspection is indicated in the right column. Usage and utility conditions may require more or less frequent inspections.		Suggested Frequency
4.0	**CHAMBER COMPONENTS (Cont'd)**	
4.4	Inspect traveler spray header assembly for free movement, through the window while washer is operating.	6 x/yr
4.5	Verify sump under floor grid sections for debris - Use a hose to clean if necessary.	6 x/yr
4.6	Verify interior light - Replace if necessary.*	6 x/yr
4.7	Verify debris from bottom door guide - Use a hose to clean if necessary.	6 x/yr
5.0	**MECHANICAL CORE**	
5.1	Verify piping system for leaks - Tighten quick-disconnect clamps if necessary.*	6 x/yr
5.2	On heat exchanger, tighten nuts at 95 ft.lb (129 N•m). Use a torque meter.	2 x/yr
5.3	Verify heat exchanger drain is not clogged - Clean if necessary.	1 x/yr
6.0	**CHEMICAL INJECTION PUMPS**	
6.1	Lubricate chemical injection pump rollers.	12 x/yr
6.2	Verify pick-up tube screens and squeeze tubes for debris. Clean if necessary.	12 x/yr
6.3	Replace squeeze tubes.	1 x/yr
7.0	**SAFETY FEATURES**	
7.1	Verify warning stickers inside wash chamber for legibility. If stickers are worn out and no longer legible, replace with new ones.	6 x/yr
7.2	Test Emergency Stop cables for proper operation.	6 x/yr
7.3	Test LOCK/UNLOCK/INIT key selector switch for proper operation.	6 x/yr
7.4	Test EMERGENCY STOP pushbutton(s) for proper operation. Replace if necessary.	6 x/yr
7.5	Test door pump safety switch.	6 x/yr
8.0	**COMPRESSOR**	
8.1	Verify intake filter and mufflers - Change if necessary.*	Every inspection
8.2	Purge tank if necessary.*	1 X/year
8.3	Inspect check valves. Clean or replace as necessary.*	6 X/year
9.0	**FILTERS**	
9.1	Inspect supply-line strainers for debris. Clean as necessary.	6 X/year
9.2	Inspect self-cleaning screen - Disassemble and remove debris from screen as necessary.	12 X/year
** Contact STERIS for this service. Service charges may be incurred. Consult your warranty for details.*		

Table 6-1. Preventive Maintenance Guide (Cont'd)

Recommended frequency of inspection is indicated in the right column. Usage and utility conditions may require more or less frequent inspections.		**Suggested Frequency**
9.0	**FILTERS (Cont'd)**	
9.3	Replace drying pre-filter.*	1 X/year
9.4	Replace drying HEPA filter.*	1 X/year
9.5	Replace VHP blower in-line filter*	2 X/year
9.6	Verify VHP catalytic converter - Clean or replace as necessary.*	1 X/year
10.0	**FINAL TEST**	
10.1	Clean dirt and lint from components. Verify all wiring, terminals and socket connections for damage or fraying.	Every inspection
10.2	Remove all test equipment installed for inspection.	Every inspection
10.3	Unlock electrical disconnect switch, position to ON and turn all utilities back ON.	Every inspection
10.4	Run unit through two cycles to verify proper operation. Verify all displays and printouts.	Every inspection
10.5	Install any panel or cover removed during inspection.	Every inspection
10.6	Inspect work area and washer to ensure removal of all materials used during inspection.	Every Inspection
** Contact STERIS for this service. Service charges may be incurred. Consult your warranty for details.*		

6.2 Cleaning Procedures

NOTE: Always start cleaning unit from load side

6.2.1 Daily Cleaning

1. After last cycle of day, allow unit to cool down.
2. On load side of washer, turn **LOCK/UNLOCK/INIT** key selector to **LOCK** position. Remove key from selector and keep on yourself. Display shows:

   WASHER LOCKED

⚠ WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Before servicing or cleaning unit, always turn LOCK/UNLOCK/INIT key selector to lock position to prevent cycle operation. Keep the key on yourself.

⚠ WARNING – PERSONAL INJURY HAZARD:

- **Always wear appropriate Personal Protective Equipment (PPE), including gloves and faceshield, when cleaning or removing debris from bottom of the wash chamber and from sump filters.**
- **Never perform cleaning of wash chamber until full cycle has been completed. If cycle has not been completed, contaminated debris or water may remain in the bottom of wash chamber.**

3. Using a damp cloth, clean door panel and exterior of unit.
4. Using key, turn **LOCK/UNLOCK/INIT** key selector to **UNLOCK** position. Display shows Mode Selection screen.
5. In Mode Selection screen, press **DOORS CONTROL** touch pad; then, press **DOOR OPEN** touch pad to open load side door.
6. On load side of washer, turn **LOCK/UNLOCK/INIT** key selector to **LOCK** position. Remove key from selector and keep on yourself. Display shows:

   WASHER LOCKED

7. Wearing appropriate personal protective equipment (PPE), enter wash chamber by load side.
8. Remove floor gratings.
9. Remove debris from bottom of sump and over suction plate.

   NOTE: Always clean sump and suction plate while they are still wet, before debris dries.

10. Replace floor gratings on bottom of wash chamber.
11. Using key, turn **LOCK/UNLOCK/INIT** key selector to **UNLOCK** position. Display shows Mode Selection screen.
12. **For double door units:** On unload side of washer, turn **LOCK/UNLOCK/INIT** key selector to **LOCK** position. Remove key from selector and keep on yourself. Display shows:

    WASHER LOCKED

13. Clean washer exterior as in **Step 3**.
14. Using key, turn **LOCK/UNLOCK/INIT** key selector to **UNLOCK** position. Display shows Mode Selection screen.

6.2.2 Weekly Cleaning

WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Before servicing or cleaning unit, always turn LOCK/UNLOCK/INIT key selector to lock position to prevent cycle operation. Keep the key on yourself.

WARNING – PERSONAL INJURY HAZARD: Always wear appropriate Personal Protective Equipment (PPE), including gloves and faceshield, when cleaning or removing debris from bottom of the wash chamber and from sump filters.

CAUTION – POSSIBLE EQUIPMENT DAMAGE: Use nonabrasive cleaners when cleaning unit. Follow directions on containers and rub in a back-and-forth motion, in same direction as surface grain. Abrasive cleaners will damage stainless steel. Cleaners rubbed in a circular motion or applied with a wire brush or steel wool on door and chamber assemblies will damage stainless steel. Do not use these cleaners on painted surfaces.

1. After last cycle of day, allow unit to cool down.
2. On load side of washer, turn **LOCK/UNLOCK/INIT** key selector to **LOCK** position. Remove key from selector and keep on yourself. Display shows:

   WASHER LOCKED

3. Clean washer exterior as outlined below:
   a. Use a multipurpose cleaner for general stains, Pry® Stain Remover Cream and Stainless Steel Cleaner, to keep equipment looking like new.
   b. Using a damp cloth or sponge, apply cleaner in a back-and-forth motion, rubbing in same direction as surface grain.
   c. Thoroughly wipe off cleaner.
   d. Polish surface with a clean, dry, lint-free cloth.
4. Clean door with a general window cleaning product.
5. Dry door with a lint-free cloth.
6. Using key, turn **LOCK/UNLOCK/INIT** key selector to **UNLOCK** position. Display shows Mode Selection screen.
7. In Mode Selection screen, press **DOOR CONTROL** touch pad; then, press **DOOR OPEN** touch pad to open load side door.
8. On load side of washer, turn **LOCK/UNLOCK/INIT** key selector to **LOCK** position. Remove key from selector and keep on yourself. Display shows:

   WASHER LOCKED

9. Wearing appropriate personal protective equipment (PPE), enter wash chamber.
10. Remove all floor gratings.
11. Remove debris from bottom of sump and each sump filter.
12. Manually raise flap door sill and use a hose to remove debris from door sliding guide.
13. Wash chamber interior with a moderately alkaline solution adding tap water.
14. Rinse with tap water and dry with a lint-free cloth.
15. Reinstall floor gratings and sump filters.
16. Proceed to clean Horizontal Spray Headers and accessories as necessary.
17. Using key, turn **LOCK/UNLOCK/INIT** key selector to **UNLOCK** position. Display shows Mode Selection screen.
18. In Mode Selection screen, press **DOOR CONTROL** touch pad; then, press **DOOR CLOSE** touch pad to close load side doors.
19. Run a DRAIN cycle to remove soiled cleaning water from wash chamber (see *SECTION 4.12, DRAIN CYCLE*).

6.2.3 Horizontal Spray Headers and Spray Jets

See Figure 6-1.

1. After last cycle of day, allow unit to cool down.
2. In Mode Selection screen, press **DOOR CONTROL** touch pad; then, press **DOOR OPEN** touch pad to open load side door.
3. On load side of washer, turn **LOCK/UNLOCK/INIT** key selector to **LOCK** position. Remove key from selector and keep on yourself. Display shows:

   WASHER LOCKED

4. Use a fine wire (approximately wire gauge of a paper clip) to push sediment from all spray jets into service-side and non-service-side horizontal spray header (see Figure 6-1).
5. To flush out sediments, remove end plug from both horizontal spray headers as follows:
   a. Remove locking pin from horizontal spray headers.
   b. Remove end plug and keep safely aside (see Figure 6-1, Detail).
   c. Reinsert locking pin in horizontal spray headers.

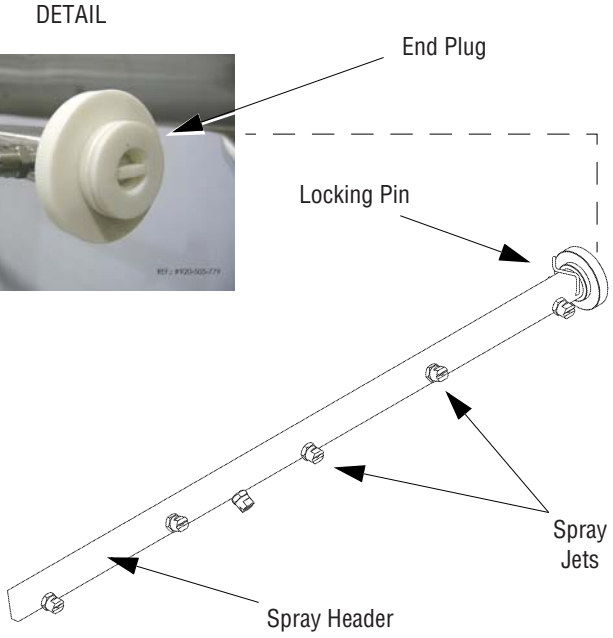


Figure 6-1. Horizontal Spray Headers and Spray Jets

6. Using key, turn **LOCK/UNLOCK/INIT** to **UNLOCK** position. Remove key from selector and keep on yourself. Display shows Mode Selection screen.
7. In Mode Selection screen, press **DOOR CONTROL** touch pad; then, press **DOOR CLOSE** touch pad to close load side doors.

8. Reinitialize washer. Turn **LOCK/UNLOCK/INIT** key switch (located on load control panel and unload side control panel) to **INIT** position.

   *NOTE: Selector returns automatically from reset to **UNLOCK** position when key is released.*

9. Process a Purge Travelers phase and a DRAIN cycle (see *SECTION 4.11, PURGE TRAVELERS* and *SECTION 4.12, DRAIN CYCLE*) with four end plugs removed.
10. When DRAIN cycle is completed, turn **LOCK/UNLOCK/INIT** key selector to **LOCK** position. Remove key from selector and keep on yourself. Display shows:

    WASHER LOCKED

11. In Mode Selection screen, press **DOOR CONTROL** touch pad; then, press **DOOR OPEN** touch pad to open load side doors.
12. Remove locking pin and reinstall end plugs on both horizontal spray headers (see Figure 6-1).
13. Press **DOOR CLOSE** touch pad to close doors.
14. Press **X** touch pad to return to Mode Selection Screen.

6.2.4 Central Spray Header Manifold (Accessory)

See Figure 6-2.

1. Remove rotary spray holder and rotary spray arms from Central Spray Header Manifold (see Figure 6-2).
2. Unscrew spray arms from spray arm hub. Rinse spray arms under running water to clean out sediment.
3. Remove end spray jets from spray arms (see Detail in Figure 6-2). Use a fine wire (approximately the wire gauge of a paper clip) to clean out sediment. Rinse under running water.
4. Reinstall end spray jets on rotary spray arms.
5. Place bushing on top of rotary spray arm hub and reinstall rotary spray arm assembly to Central Spray Header Manifold.

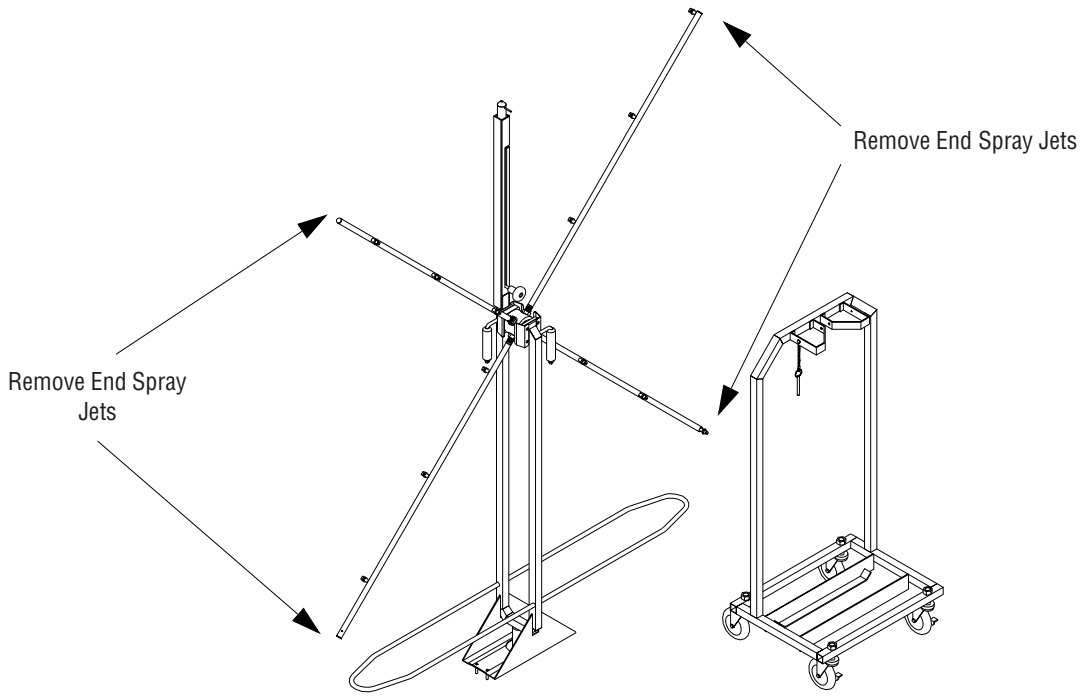


Figure 6-2. Central Spray Header Manifold (Accessory)

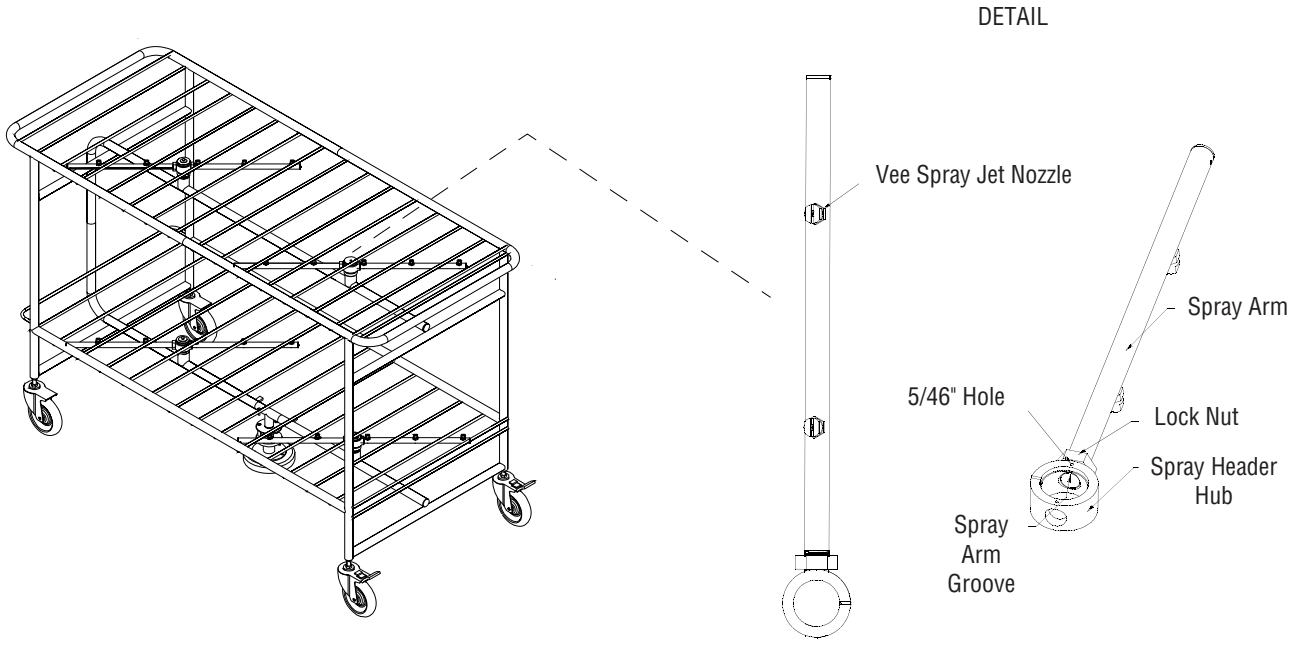


Figure 6-3. Bottle Washing Cart (Accessory)

6.2.5 Rotary Spray Arms on Bottle Washing Cart (Accessory)

See Figure 6-3.

1. Loosen locknuts from rotary spray arms and remove from Bottle Washing Cart (see Figure 6-3, Detail).
2. Use a fine wire (approximately wire gauge of a paper clip) to clean out sediment. Rinse under running water.
3. Clean bushing and rinse under running water.
4. Reinstall rotary spray arms on spray header adaptor and tighten locknuts.

   NOTE: To ease assembly, spray header hub and bushings can only be installed in one position on spray header adaptor. Align slot from spray arm to hole on hub (see Figure 6-3, Detail).
5. Reinstall rotary spray arm assembly on Bottle Washing Cart.

6.2.6 Supply-Line Strainers

NOTE: A STERIS or STERIS-trained service technician is required to perform this task. Contact STERIS for this service. Preventive maintenance is not covered under warranty.

1. Close building supply lines: hot water, cold water (if applicable), steam and air.
2. Remove and clean strainers under running water.
3. Reinstall strainers.
4. Open building supply lines.

6.2.7 Vertical Self-Cleaning Filter

See Figure 6-4.

NOTE: A STERIS or STERIS-trained service technician is required to perform this task. Contact STERIS for this service. Preventive maintenance is not covered under warranty.

IMPORTANT: *Intake filter requires periodic inspection and replacement. Initial inspection is suggested once a week; user should determine frequency thereafter.*

Remove and clean screen of self-cleaning filter cartridge located on mechanical core as follows:

> ⚠ **WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Before servicing or cleaning unit, always turn LOCK/UNLOCK/INIT key selector to lock position to prevent cycle operation. Keep the key on yourself.**

1. After last cycle of day, allow unit to cool down.
2. On load side of washer, turn **LOCK/UNLOCK/INIT** key selector to **LOCK** position. Remove key from selector and keep on yourself. Display shows:

   WASHER LOCKED

3. On mechanical core, loosen quick-disconnect clamps on valve. Push tank 1 recirculation valve to the right (see Figure 6-4, Detail A).

   NOTE: Once self-cleaning filter cartridge has been cleaned, tank 1 recirculation valve may remain pulled or returned to its original location.

4. Loosen quick-disconnect clamps on self-cleaning filter and piping. Push return outlet piping to the left (see Figure 6-4, Detail B).
5. Lift out self-cleaning filter cartridge. Remove debris by scraping exterior surface filter cartridge.
6. Rinse filter under running water.
7. Reinsert filter.
8. Move piping back into position. Tighten quick-disconnect clamps.
9. Using key, turn **LOCK/UNLOCK/INIT** to **UNLOCK** position.
10. Reinitialize washer. Turn **LOCK/UNLOCK/INIT** key switch (located on load side control panel and unload side control panel) to **INITIALIZATION**. Display shows Mode Selection screen.

    *NOTE: Selector returns automatically from reset to **UNLOCK** position when key is released.*

11. In Mode Selection screen, press **AUTOMATIC** touch pad.
12. Cycle Selection menu appears.
13. Run a **CART** cycle to verify for leaks.

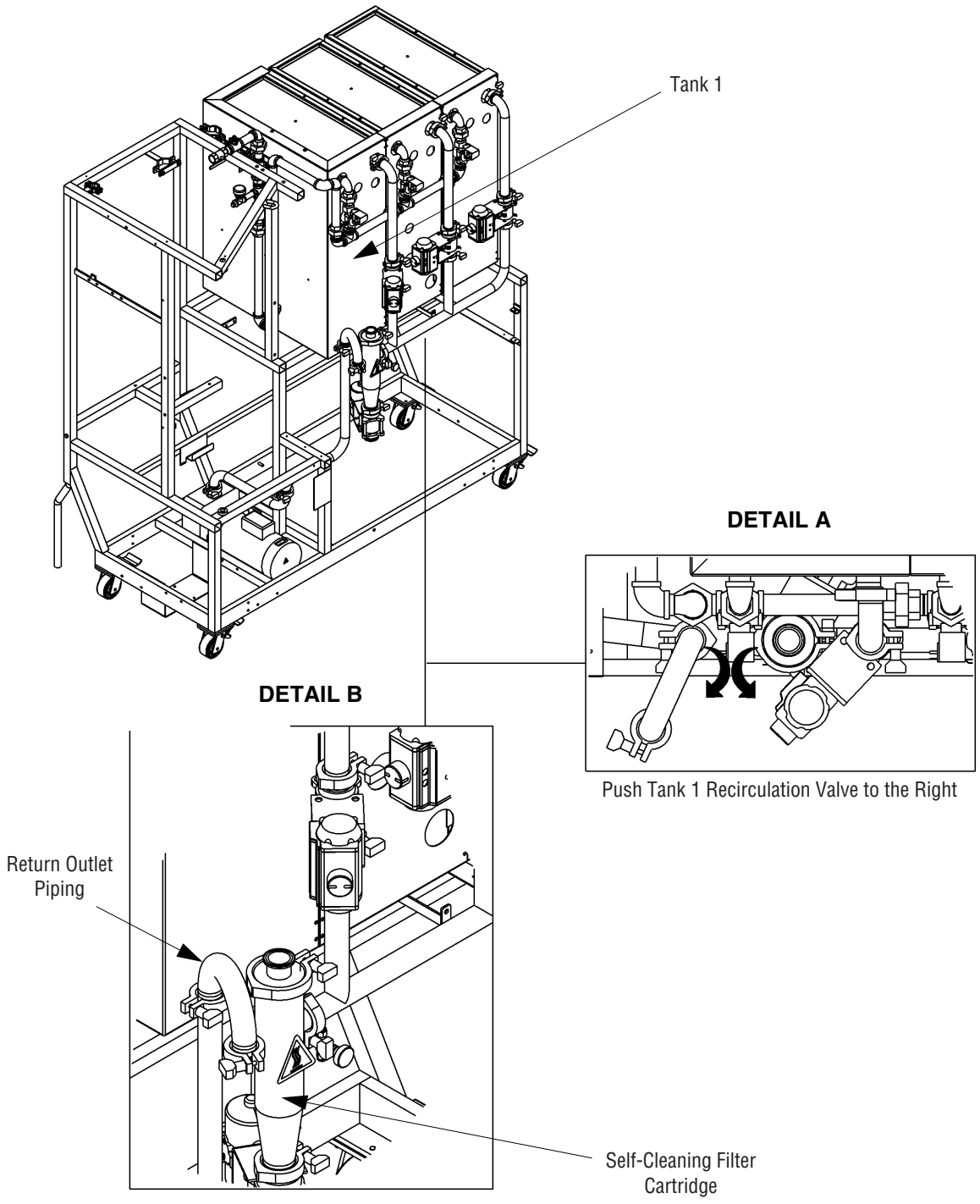


Figure 6-4. Vertical Self-Cleaning Filter

6.3 DESCALER Cycle

Remove hard water deposits from wash chamber as follows using the DESCALER cycle. This cycle should be performed each week.

NOTE: Depending on hardness of water being used, it may be necessary to remove hard water deposits more often. Remove deposits from wash chamber whenever deposits become visible.

IMPORTANT: *In case a malfunction occurs and an alarm is displayed during DESCALER cycle, press* ***ALARM ACK*** *touch pad and call STERIS.*

NOTE: DESCALER cycle is approximately one hour, depending on options present.

1. In Mode Selection screen, press **AUTOMATIC** touch pad. Cycle Selection screen appears.
2. Press **RIGHT** arrow touch pad to advance cycle menus until DESCALER cycle is available.
3. Press **DESCALER** touch pad to select.
4. Press **START CYCLE** touch pad. Cycle proceeds as programmed.
5. All tanks drain completely to ensure only clean water is being used. When all tanks are completely drained, tanks start filling with clean water. Then, sump is filled with water from alkaline tank, descaler injection starts. Once descaling is completed, washer proceeds to rinse alkaline tank.
6. The same sequence is repeated for Rinse and Acid (if Additional Wash Tank option is present) tanks. Once Rinse treatment is completed in all tanks, a Vapor Removal phase starts.
7. When OPEN DOORS touch pads are available, press **DOOR OPEN** touch pad on unload side to open door and allow wash chamber to cool down.
8. Verify sump filters in bottom of sump for debris. Clean suction plate if necessary. Display returns to Mode Selection screen.

6.4 Chemical Container Replacement

To achieve maximum cleaning efficiency, select a chemical appropriate to soil type being processed. Refer to *SECTION 2.4, CHEMICAL ADDITIVES SPECIFICATIONS*, and always follow chemical manufacturer's recommendations for amount of chemical to be used.

NOTE: When using chemicals note the following:

1) *Contact STERIS for information on specific cleaning and descaling products recommended for use with this equipment.*
2) *Always use a non-foaming chemical for effective cleaning and proper pump operation.*
3) *Wear appropriate personal protective equipment (PPE) for this procedure.*

- When chemical is low or has run out:

1. On load side of washer, turn **LOCK/UNLOCK/INIT** key selector to **LOCK** position. Remove key from selector and keep on yourself. Display shows:

   WASHER LOCKED

2. Remove pickup tube from empty container. Follow proper disposal instructions found on chemical container.
3. Verify pickup tube and filter. Clean if obstructed.
4. Install a new container.
5. Insert color-coded pickup tube into new corresponding container. Ensure pickup tube is upright.

   System is self-priming; no other operation is necessary.

6. Using key, turn **LOCK/UNLOCK/INIT** key selector to **UNLOCK** position. Display shows Mode Selection screen.

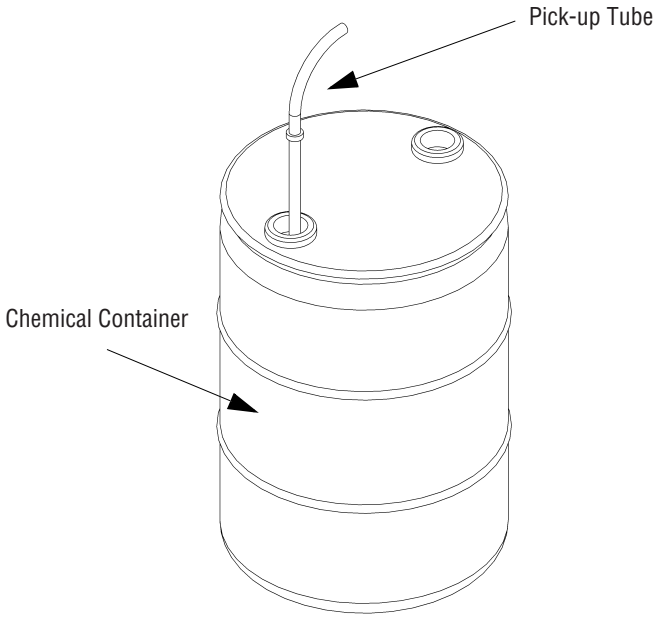


Figure 6-5. Chemical Container

6.5 Injection Pumps

1. Each month, have a STERIS or STERIS-trained service technician lubricate section(s) of squeeze tube in contact with pump(s), using silicone lubricant (P117950-599).
2. Each month, verify squeeze tube(s) for any leaks or signs of wear. If necessary, replace tube as follows:

   IMPORTANT: *To prevent mixing squeeze tube connections, verify and remove squeeze tube and pickup tube for only one injection pump at a time.*

   a. On load side of washer, turn **LOCK/UNLOCK/INIT** key selector to **LOCK** position. Remove key from selector and keep on yourself. Display shows:

      WASHER LOCKED

   b. Remove clamps and disconnect squeeze tube ends from pickup tube and feed lines.

   c. Remove screws attaching injection pump faceplate to injection pump head. Lift faceplate away from pump head.

   d. To remove squeeze tube from pump head, pull out tube by one end. Discard tube.

   e. Clean all pump surfaces.

   f. Insert one end of new tube into pump head and rotate roller block manually.

   g. Liberally spread silicone lubricant (P117950-599) over rollers in roller block and all tubing surfaces in contact with pump head.

   h. Return faceplate to pump head and fasten with screws previously removed.

   i. Connect ends of tube to pickup tube and feed lines. Attach clamps to both lines.

   j. Using key, turn **LOCK/UNLOCK/INIT** key selector to **UNLOCK** position. Display shows Mode Selection screen.

   k. In Mode Selection screen, press **AUTOMATIC** touch pad.

   l. Cycle Selection menu appears.

   m. Initiate a cycle to verify squeeze tube operation. Verify correct chemical is injected during each cycle treatment (refer to **Table 5-1**, *Cycle Description Chart*).

6.6 Change Printer Paper

WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Regularly scheduled preventive maintenance, in addition to faithful performance of minor maintenance described in this manual, is required for safe and reliable operation of this equipment. Contact STERIS to schedule preventive maintenance.

WARNING – ELECTRIC SHOCK HAZARD: Always set building electrical-supply disconnect switch and console master power switch to OFF before performing any preventive maintenance functions within the compartments. Electrical shock can cause serious injury.

See Figure 6-6.

NOTE: Do not operate printer without paper.

1. Press on the dots on printer cover to release latch; pull cover out towards you to completely disengage cover; then, gently swing it down 180° until it rests against equipment panel (see Figure 6-6).
2. Press on the indentation on the right side-wall of paper cover, gently pull to release and swing door to the left until it is open (see Figure 6-7).
3. Cut leading edge of paper roll straight and square with the sides as shown on Figure 6-8.
4. Mount paper roll on paper-roll-holder, two plastic protrusions shaped like domes, inside paper compartment. Paper must curl up as shown (see Figure 6-9). Paper roll core must properly align with paper-roll-holder. Make sure paper-roll-holder fits inside paper core and paper roll can turn freely.
5. Hold both edges of paper and insert it straight into paper slot of printer mechanism. Printer feeds paper automatically.
6. Press FEED Button to get desired length of paper fed through mechanism. Do not pull paper in either direction through printer mechanism.
7. Remove take-up spool and insert leading edge of paper into slit on its shaft. Wrap paper around spool two or three times tightly and install take-up spool in printer. First make sure that gear on take-up spool aligns with gear on printer and then press the other end of shaft so it snaps in on metal frame.
8. Close paper cover and then close front cover.

NOTE: When changing paper roll, take note of the following:

1) Use a paper that meets the printer specifications.

2) Do not use a paper that is glued to the core.

3) Do not fold leading edge of paper when you use a new roll.

4) Do not operate the printer without paper or ribbon; this leads to rapid deterioration of the print head.

5) Do not use any sharp object to remove paper jams.

6) Do not pull on the paper while the printer is printing.

IMPORTANT: *Printer will not operate if there is no paper in paper compartment.*

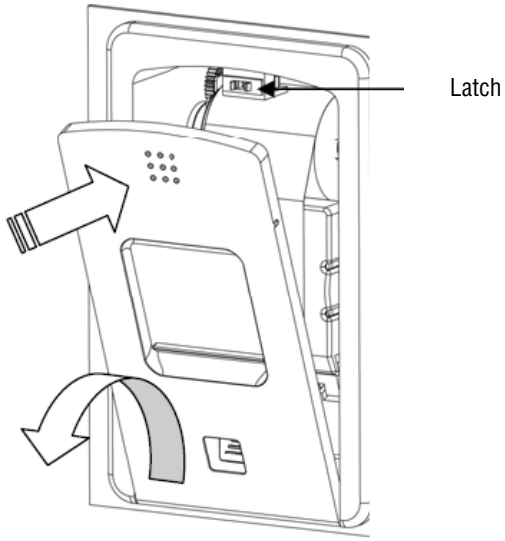


Figure 6-6. Open Printer Cover

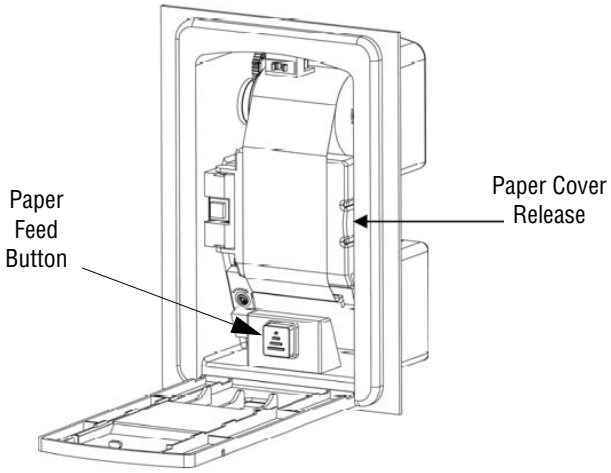


Figure 6-7. Open Paper Cover Compartment

Figure 6-8. Cut Paper Edge

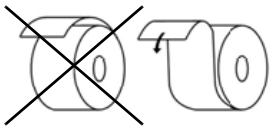


Figure 6-9. Install Paper Roll

6.7 Changing Printer Ribbon Cartridge

1. Open printer front cover.
2. Remove paper inside printer mechanism. Do not pull paper out. Use a pair of scissors to cut paper, where it is being fed inside mechanism and use Paper Feed Button to remove paper remaining in printer.
3. Remove old cartridge by pressing cartridge, where marked "PUSH", on right side.
4. Turn Ink Cartridge Knob in direction of arrow to take up any slack in ribbon.
5. Place new cartridge on mechanism so ribbon aligns between print head and platen. Push down until it clicks in.
6. Turn Ink Cartridge Knob in direction of arrow a few times to take up any slack and make sure ribbon is installed properly without wrinkles or creases.

NOTE: When changing ribbon cartridge, take note of the following:

1) Make sure power is turned off when replacing ribbon cartridge.

2) Replace ribbon cartridge before it is completely worn out and dry.

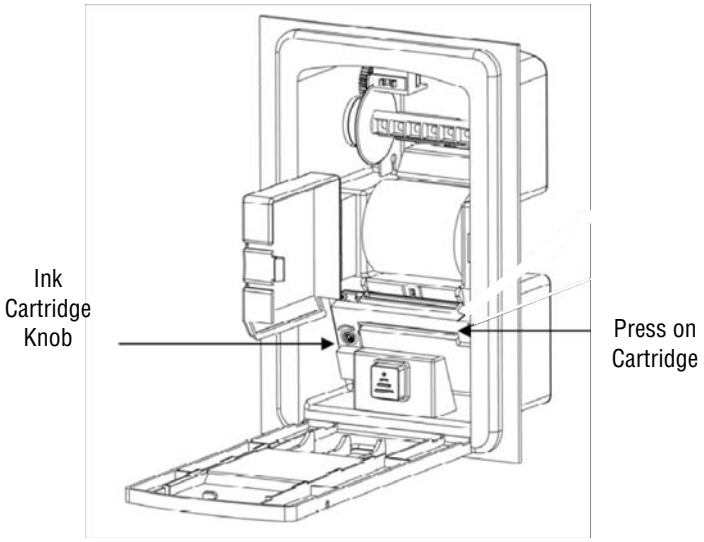


Figure 6-10. Changing Printer Ribbon Cartridge

TROUBLESHOOTING

7

IMPORTANT: *A listing of the Safety Precautions to be observed when operating this Cage and Rack Washer can be found in SECTION 1. Do not operate equipment until you have become familiar with this information.*

WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Only STERIS or STERIS-trained service technicians should make repairs and adjustments to this equipment. Maintenance done by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate warranty or result in costly damage. Contact STERIS regarding service options.

WARNING – ELECTRIC SHOCK HAZARD:

- **Always set building electrical-supply disconnect switch and console master power switch to OFF before performing any preventive maintenance functions within the compartments. Electrical shock can cause serious injury.**
- **Disconnect all utilities to washer before servicing. Do not service washer unless all utilities have been properly locked out. Always follow local occupational health and safety regulations, as well as electric and plumbing codes.**

WARNING – BURN HAZARD: Before performing any service on unit, wait until chamber and piping cool to room temperature.

This section contains detailed information on types of washer malfunctions likely to occur and possible causes and corrective actions.

If you are unable to correct the problem with use of the following Troubleshooting Charts, or if a problem occurs that is not described on chart, please call STERIS. A factory-trained technician will promptly place your washer in proper working condition. Service charges may be incurred. Consult your warranty for details.

NOTE: Never allow unqualified persons to service washer.

- **Table Descriptions:**

Tables 7-1 to 7-3 - Troubleshooting Chart – Problems where NO alarm or printout occur.

Table 7-4 - Troubleshooting Chart – Problems where alarm and/or printout occur.

CAUTION – POSSIBLE EQUIPMENT DAMAGE:

- **Repeated fuse burnouts indicate a short circuit or overload. Trouble should be located and corrected by a fully trained technician.**
- **Failure to connect wires to proper terminals may result in damage to, or malfunctioning of, unit when power is applied.**

Table 7-1. Troubleshooting Chart – No Alarm or Printout, Control Panel Problems

PROBLEM	POSSIBLE CAUSE AND CORRECTION
1. Normal display when power switch is turned on, but printer will not print.	1. Printer cable unplugged from HMI – Plug printer cable to HMI. 2. Printer is defective – Call STERIS.*
2. Printer printout is erratic.	Printer is defective – Call STERIS.*
3. Generated printout is light or blank or parts of characters are missing on generated printout.	1. Printer paper installed backwards – Reinstall paper roll with paper feeding downward from back of roll. 2. Wrong printer paper used – Use only STERIS paper (P117913-393). 3. Printer head is dirty – Call STERIS.* 4. Printer is defective – Call STERIS.*
4. Paper will not be taken up into power take-up.	Verify printer motor or roller – Replace as necessary.
5. Printer will not print (printer must print one line in less than 3 seconds).	1. Paper jammed in printer – Verify and clear out jam as necessary. 2. Drag on paper roll – Verify and replace printer roll. Use only STERIS paper (P117913-393). 3. Printer is defective – Call STERIS.*
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-2. Troubleshooting Chart – No Alarm or Printout, Electrical Problems

PROBLEM	POSSIBLE CAUSE AND CORRECTION
1. Interior light is off when building electrical supply disconnect switch is ON.	1. Breaker tripped – Call STERIS.* 2. Defective fluorescent lamp or ballast – Call STERIS.* 3. Fuse is blown – Call STERIS.* 4. Defective power supply – Call STERIS.*
2. Control panel assembly (printer/display) does not operate. Display is blank when building electrical supply disconnect switch is ON.	1. Breaker tripped – Call STERIS.* 2. Defective power supply – Call STERIS.* 3. Fuse is blown – Call STERIS.* 4. Display defective – Call STERIS.* 5. Printer is defective – Call STERIS.*
3. Printer does not operate (display is blank) when building electrical supply disconnect switch is ON.	1. Cable unplugged – Verify cable is plugged. 2. Printer is defective – Call STERIS.*
4. Thornton controller does not operate (display is blank) when building electrical supply disconnect switch is set to ON.	Call STERIS*.
5. Chemical pump(s) malfunction.	1. Verify pump squeeze tubes for damage or wear – Replace squeeze tubes. 2. Lubricate pump and squeeze tubes. 3. Breaker tripped – Call STERIS.* 4. Defective power supply – Call STERIS.* 5. Fuse is blown – Call STERIS*. 6. Defective chemical injection pump – Call STERIS.*
6. External fan malfunction.	• External fan supplied by Customer: Verify and replace as necessary. • External fan supplied by manufacturer: Exhaust fan MSP3 tripped – Verify MS3P and reset as necessary. • Exhaust Fan overloads tripped – Verify overload and reset if necessary
7. Pressure switch does not operate.	Verify for DC voltage (24DC) on pressure switch connector – Correct as necessary.
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-2. Troubleshooting Chart – No Alarm or Printout, Electrical Problems (Cont'd)

PROBLEM	POSSIBLE CAUSE AND CORRECTION
8. Pressure pump does not run during the recirculation phase.	1. Chamber doors unlock– Press DOOR CLOSE touch pad to close doors then CYCLE/START touch pad to start cycle. 2. Pressure pump MSP1 tripped – Verify MSP1 and reset if necessary. 3. Pressure pump overloads tripped – Verify overload and reset if necessary.
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-3. Troubleshooting Chart – No Alarm or Printout, Mechanical Problems

PROBLEM	POSSIBLE CAUSE AND CORRECTION
1. Excessive vapor exhausting from doors.	1. Damaged door gaskets – Verify and repair or replace gasket as necessary. 2. Exhaust fan not operating properly – Call STERIS.* 3. If condition reoccurs, call STERIS.*
2. Doors open and/or close too slowly and/or vibrate.	1. Debris in door bottom gutter– Clean door gutter. 2. Cable, cylinder and pulley malfunction – Call STERIS.* 3. If condition reoccurs, call STERIS.*
3. Doors open and/or close too quickly.	1. Door cylinder flow control misadjusted – Call STERIS*. 2. Air pressure incorrectly adjusted – Call STERIS.*
4. Double door units: Unload door fails to open.	1. Safety interlock feature engaged – Unload door does not open until cycle is completed. 2. Unload door mechanism defective – Call STERIS.*
5. Doors do not open completely.	1. Doors obstructed – Remove obstruction. 2. Cables and pulleys malfunction – Call STERIS.* 3. Doors guiding system malfunction – Call STERIS.* 4. **If Automatic Floor Tilting option is present:** Floor tilt still in upper position – Call STERIS.* 5. Cylinder flow control improperly adjusted – Call STERIS.* 6. Air pressure improperly adjusted – Call STERIS.*
6. Travelers vibrating.	Cable(s) and pulley(s) malfunction – Call STERIS.*
7. Travelers moving too slowly.	1. Cable and pulley malfunction or damage – Call STERIS.* 2. Air flow control improperly adjusted – Call STERIS.* 3. Air pressure improperly adjusted – Call STERIS.*
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-3. Troubleshooting Chart – No Alarm or Printout, Mechanical Problems (Cont'd)

PROBLEM	POSSIBLE CAUSE AND CORRECTION
8. Load comes out dirty	1. Wrong type of detergent or inappropriate concentration – Refer to *SECTION 2.4, CHEMICAL ADDITIVES SPECIFICATIONS,* and follow manufacturer's recommendations for amount of detergent to be used. 2. Horizontal spray jets clogged – Clean spray jets. 3. Wash treatment too short – Increase wash treatment time. Call STERIS.* 4. Tank reuse counter too high – Reset tank reuse counter in Service mode (default reuse setting is 20). Call STERIS.* 5. If condition reoccurs, call STERIS.*
9. **If Automatic Floor Tilting option is present:** Automatic floor tilt lifting too slowly, not lifting, or stays in upper position.	1. Load exceeds 800 lb (363 kg) – Verify load weight. 2. Air flow control improperly adjusted – Call STERIS.* 3. Air pressure improperly adjusted – Call STERIS.* 4. If condition reoccurs, call STERIS*.
10. Abnormal draining of wash chamber or sump overflow.	1. Sump filters clogged – Remove and clean sump filters. 2. Self-cleaning filter cartridge clogged – Clean cartridge. 3. Sump siphoning tubing clogged – Verify and remove obstruction. 4. Suction pump impeller damaged – Call STERIS.* 5. If condition reoccurs, call STERIS.*
11. Foam in chamber or inside tanks.	1. Wrong type detergent – Refer to *SECTION 2.4, CHEMICAL ADDITIVES SPECIFICATIONS,* and follow manufacturer's recommendations for amount of detergent to be used. 2. Too much chemical injected during treatment – Call STERIS.*
12. Detergent leaks from mechanical core.	Call STERIS.*
13. Suction pump abnormally noisy.	1. Sump filters clogged – Remove and clean sump filters. 2. If condition reoccurs call STERIS.*
14. High pressure pump abnormally noisy.	Call STERIS.*
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-3. Troubleshooting Chart – No Alarm or Printout, Mechanical Problems (Cont'd)

PROBLEM	POSSIBLE CAUSE AND CORRECTION
15. Insufficient water or no water entering chamber through manifolded accessory.	1. Bad connection between spray header and manifold – Install header correctly. 2. Clogged spray nozzles – Clean spray nozzles. 3. Incorrect cycle parameters – Call STERIS.* 4. If condition reoccurs – Call STERIS.*
16. Water leaks from washer.	1. Spray jets clogged – Clean spray jets. 2. Piping is leaking – Call STERIS.* 3. Damaged door gasket – Call STERIS.* 4. Door locking mechanism improperly adjusted – Call STERIS.*
17. Cover on side tank is ejected from normal position.	Air vent of side tank is clogged – Verify and clean air vent.
18. Insufficient or no water entering solution tanks during treatments.	1. Supply valves not fully open – Open supply valves. 2. If condition reoccurs, call STERIS.* See also *Alkaline too long to fill, Rinse too long to fill* and *Acid too long to fill* alarms in **Table 7-4.**
19. Insufficient or no water entering chamber through horizontal spray nozzles.	1. Horizontal spray headers clogged – Clean spray headers. 2. Chamber sump filters clogged – Clean sump filters. 3. Self-cleaning filter clogged – Clean filter. 4. If condition reoccurs, call STERIS.*
20. Treatment stops for no apparent reason.	1. Chamber doors open – Press **DOOR CLOSE** touch pad to close doors and press **START** touch pad to resume cycle 2. If condition reoccurs, call STERIS.*
21. Noisy exhaust fan.	Call STERIS.*
22. Vapor not removed from chamber.	1. Drying exhaust time too short – Increase drying exhaust time. Call STERIS*. 2. Units without exhaust fan: Building exhaust system does not work properly – Call STERIS.* 3. Damaged or badly adjusted damper – Call STERIS.* 4. If condition reoccurs, call STERIS.*
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-3. Troubleshooting Chart – No Alarm or Printout, Mechanical Problems (Cont'd)

PROBLEM	POSSIBLE CAUSE AND CORRECTION
23. **If Drying System option is present**, noisy drying fan.	Call STERIS.*
24. **If Drying System option is present**, incomplete drying.	1. Programmed drying time too short – Increase drying time. 2. If condition reoccurs, call STERIS.*
25. Sump overflow.	Suction piping drain pneumatic valve malfunction (always closed) – call STERIS.*
26. Water in Cooldown tank overflow.	1. Building cold water over 70 °F (21°C). 2. Cooldown tank high water level switch malfunction – call STERIS.* 3. Cooldown tank RTD malfunction – call STERIS.* 4. Defective cooldown tank or cold water injection system inlet valve (always open) – call STERIS.
* *Service charges may be incurred. Consult your warranty for details.*	

IMPORTANT: *When a problem occurs with the Basil 5700 LSR Cage and Rack Washer, an alarm sounds. Refer to SECTION 4.9, RESPONDING TO AN ALARM, on how to respond to faults.*

Table 7-4. Troubleshooting Chart - Alarm and/or Printout

ALARM MESSAGE	POSSIBLE CAUSE AND CORRECTION
1. Cycle will not start and screen displays: **UNEXPECTED LOCKING**	**Key selector switch is set in lock position.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Washer locked. Trained operator must use key to turn LOCK/UNLOCK/INIT selector switch to UNLOCK position and return washer to normal operation. 3. If situation reoccurs, LOCK/UNLOCK/INIT selector switch defective – call STERIS.*
2. Alarm sounds and screen displays: **MAINTENANCE DUE** **CALL STERIS** Printer records: MAINTENANCE DUE	**Cycle count and/or service count time delay has expired** – Perform routine inspection and maintenance as follows: 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Perform routine inspection and preventive maintenance (see *SECTION 6.1, PREVENTIVE MAINTENANCE SCHEDULE*). 3. Reset cycle counter and service counter in Service mode – Call STERIS*.
3. Alarm sounds and screen displays: **MCR DEACTIVATED**	1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Turn LOCK/UNLOCK/INIT key selector to INIT position (selector returns automatically from INIT to UNLOCK position when key is released).
4. Alarm sounds and screen displays: **PLC CONTROLLER BATTERY LOW**	PLC Battery needs to be replaced. 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Replace PLC battery – Call STERIS*.
5. Alarm sounds and screen displays: **WASHER WARRANTY** **WILL EXPIRE SOON**	Warranty is about to expire (this alarm is generated 30, 14 and 7 days before warranty expiration date). Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer – Perform preventive maintenance.
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-4. Troubleshooting Chart - Alarm and/or Printout (Cont'd)

ALARM MESSAGE	POSSIBLE CAUSE AND CORRECTION
6. Alarm sounds and screen displays: **ALARM: LOAD DOOR** **DID NOT UNLOCK** Printer records: *ALARM LOAD DOOR DID NOT UNLOCK HH:MM:SS YY/MM/DD or (if double door units)... **ALARM: UNLOAD DOOR** **DID NOT UNLOCK** Printer records: *ALARM UNLOAD DOOR DID NOT UNLOCK HH:MM:SS YY/MM/DD	**Load or unload door remain locked after DOOR OPEN touch pad was pressed.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Air supply too low – Open air supply valves. 3. Defective door safety switch – Call STERIS.* 4. Load/Unload door lock pneumatic cylinder defective, verify operation – Call STERIS.* 5. If condition reoccurs, call STERIS.*
7. Alarm sounds and screen displays: **ALARM: LOAD DOOR** **DID NOT LOCK** Printer records: *ALARM LOAD DOOR DID NOT LOCK HH:MM:SS YY/MM/DD or (if double door units)... **ALARM: UNLOAD DOOR** **DID NOT LOCK** Printer records: *ALARM: UNLOAD DOOR DID NOT LOCK HH:MM:SS YY/MM/DD	**Load or unload door remain unlocked after DOOR CLOSE touch pad was pressed or more than 5 seconds were required to lock door.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Air supply too low – Open air supply valves. 3. Defective door safety switch – Call STERIS.* 4. Door obstructed – Clear door obstruction. 5. Close load or unload door sensor misadjusted – Call STERIS.* 6. Load/Unload door lock pneumatic cylinder defective, verify operation – Call STERIS.* 7. If condition reoccurs, call STERIS.*

* *Service charges may be incurred. Consult your warranty for details.*

Table 7-4. Troubleshooting Chart - Alarm and/or Printout (Cont'd)

ALARM MESSAGE	POSSIBLE CAUSE AND CORRECTION
8. Alarm sounds and screen displays: **ALARM: LOAD DOOR UNLOCK** Printer records: *ALARM LOAD DOOR UNLOCK HH:MM:SS YY/MM/DD or (if double door units)... **ALARM: UNLOAD DOOR UNLOCK** Printer records: *ALARM UNLOAD DOOR UNLOCK HH:MM:SS YY/MM/DD	**Door lock sensor was deactivated while cycle is in process.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Press **DOOR CLOSE** touch pad to close doors before starting a cycle. 3. Air supply too low – Open air supply valves. 4. Defective door safety switch – Call STERIS.* 5. Load/Unload door lock pneumatic cylinder defective, verify operation – Call STERIS.* 6. If condition reoccurs, call STERIS.*
9. Alarm sounds and screen displays: **ALARM: LOAD DOOR OBSTRUCTED** Printer records: *ALARM LOAD DOOR OBSTRUCTED HH:MM:SS YY/MM/DD or... **ALARM: UNLOAD DOOR OBSTRUCTED** Printer records: *ALARM UNLOAD DOOR OBSTRUCTED HH:MM:SS YY/MM/DD	**An object or a person obstructs doors while closing:** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Remove object. 3. Press **DOOR CLOSE** touch pad on load or unload side control panel to close doors. 4. If condition reoccurs, call STERIS.*
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-4. Troubleshooting Chart - Alarm and/or Printout (Cont'd)

ALARM MESSAGE	POSSIBLE CAUSE AND CORRECTION
10. Alarm sounds and screen displays: **ALARM: <u>TANK NAME</u>** **TOO LONG TO FILL** Printer records: * ALARM *<u>TANK NAME</u>* TOO LONG TO FILL HH:MM:SS YY/MM/DD	**(Tank Name) water level not reached within specified time.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Building water supply valves not fully open or closed – Verify and open building supply valves as necessary. 3. Building air supply too low – Call STERIS.* 4. Tank filling alarm time too short (4 min. default) – Call STERIS.* 5. Not enough building water pressure – Verify or adjust building water pressure. 6. (Tank Name) outlet valve open – Call STERIS.*.
11. Alarm sounds and screen displays: **ALARM: <u>TANK NAME</u>** **TOO LONG TO DRAIN** Printer records: *ALARM: *<u>TANK NAME</u>* TOO LONG TO DRAIN HH:MM:SS YY/MM/SS	**(Tank Name) water level sensor is still activated within specified time or less than 100 L detected when filling tank.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Building water supply valves closed – Open air supply valves. 3. Building water supply pressure too low – Call STERIS.* 4. (Tank Name) outlet valve always closed – Call STERIS.* 5. (Tank Name) filling valve always open – Call STERIS.*
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-4. Troubleshooting Chart - Alarm and/or Printout (Cont'd)

ALARM MESSAGE	POSSIBLE CAUSE AND CORRECTION
12. Alarm sounds and screen displays: **ALARM: <u>DET. NAME</u>** **INJ NOT REACHED** Printer records: *ALARM: *<u>DET. NAME</u>* INJ NOT REACHED HH:MM:SS YY/MM/DD	**It takes too much time to reach Alkaline concentration.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Detergent empty – Replace container. 3. Pick-up tube not in chemical container or chemical tubing not primed – Place pick-up tube back into chemical container or prime chemical tubing, as necessary. 4. There is 1 min. without pulses or more than 1 second without pulses after having pulses – Call STERIS.* 5. Tube is leaking – Call STERIS.* 6. Chemical injection pump rotor is jammed – Call STERIS.*
13. Alarm sounds and screen displays: **ALARM: <u>CHEMICAL NAME</u>** **PUMP IS DEFECTIVE** Printer records: *ALARM *<u>CHEMICAL NAME</u>* PUMP IS DEFECTIVE HH:MM:SS YY/MM/DD	**Once chemical injection phase is complete, control still detects pulses coming from a flowmeter.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Chemical pump is defective – Call STERIS.*
14. **If Drain Cooldown with Cold Water Injection option is present**, an alarm sounds and screen displays: **ALARM: COOLDOWN** **WATER LEVEL DEFECT.** Printer records: *ALARM: COOLDOWN WATER LEVEL DEFECT. HH:MM:SS YY/MM/DD	**Cooldown tank water level sensor malfunction (high water level switch detects water but low water level sensor does not).** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Press **RESUME CYCLE** touch pad to resume operation. 3. If condition reoccurs – Call STERIS.*
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-4. Troubleshooting Chart - Alarm and/or Printout (Cont'd)

ALARM MESSAGE	POSSIBLE CAUSE AND CORRECTION
15. **If ph Neutralizing System option is present**, alarm sounds and screen displays: **ALARM: NEUTRAL. PUMP MOTOR OVERCURRENT** Printer records: *ALARM NEUTRAL. PUMP MOTOR OVERCURRENT HH:MM:SS YY/MM/DD	**Control detects a malfunction with neutralizing pump.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Neutralizing pump malfunction – Call STERIS.*
16. Alarm sounds and screen displays: **ALARM: EXHAUST FAN MOTOR OVERCURRENT** Printer records: * ALARM EXHAUST FAN MOTOR OVERCURRENT HH:MM:SS YY/MM/DD	**Control detects a malfunction with exhaust fan.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Exhaust fan malfunction – Call STERIS.*
17. **If Drying System option is present**, alarm sounds and screen displays: **ALARM: DRYING FAN MOTOR OVERCURRENT** Printer records: * ALARM DRYING FAN MOTOR OVERCURRENT HH:MM:SS YY/MM/DD	**Control detects a malfunction with drying fan.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Drying fan malfunction – Call STERIS.*
18. Alarm sounds and screen displays: **ALARM: VHP FAN MOTOR OVERCURRENT** Printer records: * ALARM VHP FAN MOTOR OVERCURRENT HH:MM:SS YY/MM/DD	**Control detects a malfunction with VHP fan.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. VHP fan malfunction – Call STERIS.*
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-4. Troubleshooting Chart - Alarm and/or Printout (Cont'd)

ALARM MESSAGE	POSSIBLE CAUSE AND CORRECTION
19. Alarm sounds and screen displays: **ALARM: PRESSURE PUMP MOTOR OVERCURRENT** Printer records: * ALARM PRESSURE PUMP MOTOR OVERCURRENT HH:MM:SS YY/MM/DD	**Control detects a malfunction with pressure pump.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. High pressure pump malfunction – Call STERIS.*
20. Alarm sounds and screen displays: **ALARM: SUCTION PUMP MOTOR OVERCURRENT** Printer records: * ALARM SUCTION PUMP MOTOR OVERCURRENT HH:MM:SS YY/MM/DD	**Control detects a malfunction with suction pump.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Suction pump malfunction – Call STERIS.*
21. Alarm sounds and screen displays: **ALARM: PUMP PRESSURE IS TOO LOW** Printer records: *ALARM PUMP PRESSURE IS TOO LOW HH:MM:SS YY/MM/DD	**Pressure switch signal is open.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Sump filters clogged – Clean filters. 3. Self-cleaning filter cartridge clogged – Verify and clean as necessary. 4. Missing spray jets – Reinstall spray jets. 5. Heating time too long – Call STERIS.* 6. Building exhaust (CFM) too high – Call STERIS.* 7. Door closed pump safety switch out of adjustment – Call STERIS.* 8. If condition reoccurs, call STERIS.*
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-4. Troubleshooting Chart - Alarm and/or Printout (Cont'd)

ALARM MESSAGE	POSSIBLE CAUSE AND CORRECTION
22. Alarm sounds and screen displays: **ALARM: BOOSTER** **RTD IS DEFECTIVE** Printer records: *ALARM BOOSTER RTD IS DEFECTIVE HH:MM:SS YY/MM/DD	**Open or short circuit signal on in-line heat exchanger RTD is detected.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. In-line heat exchanger malfunction – Call STERIS.* 3. Booster in-line water RTD malfunction – Call STERIS.*
23. **If Drain Discharge Cooldown System option is present,** screen displays: **ALARM: COOLDOWN** **RTD IS DEFECTIVE** Printer records: *ALARM COOLDOWN RTD IS DEFECTIVE HH:MM:SS YY/MM/DD	**Open or short circuit on Cooldown RTD is detected.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Cooldown tank or cold water injection system RTD malfunction – Call STERIS.*
24. Alarm sounds and screen displays: **ALARM: BOOSTER** **RTD IS DEFECTIVE** Printer records: *ALARM BOOSTER RTD IS DEFECTIVE HH:MM:SS YY/MM/DD	**Open or short circuit on Rinse RTD is detected.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Rinse tank RTD malfunction – Call STERIS.*
25. Alarm sounds and screen displays: **ALARM: WATER** **FLOWMETER IS** **DEFECTIVE** Printer records: *ALARM WATER FLOWMETER IS DEFECTIVE HH:MM:SS YY/MM/DD	**Flowmeter did not detect pulses or more than 200 liters detected during tank(s) filling phase.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Defective main water inlet flowmeter (paddle wheel jammed) – Call STERIS.* 3. Verify flowmeter functionality – Call STERIS.*
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-4. Troubleshooting Chart - Alarm and/or Printout (Cont'd)

ALARM MESSAGE	POSSIBLE CAUSE AND CORRECTION
26. Alarm sounds and screen displays: **ALARM: TRAVELER SENSORS DEFECTIVE** Printer records: *ALARM TRAVELER SENSORS DEFECTIVE HH:MM:SS YY/MM/DD	**Control detects traveler system in up and down positions simultaneously.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Defective traveler cylinder left position sensor (always closed) – Call STERIS.* 3. Defective traveler cylinder right position sensor (always closed) – Call STERIS.*
27. **If pH Neutralizing System option is present**, pH Can't Be Neutralized Alarm sounds and screen displays: **ALARM: pH CAN'T BE NEUTRALIZED** Printer records: *ALARM pH CAN'T BE NEUTRALIZED HH:MM:SS YY/MM/DD	**Water in cooldown tank is not neutralized after 16 trials.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Neutralizing chemical container empty – Replace empty container. 3. Defective cooldown tank lowering pH injection pump – Call STERIS.* 4. Defective cooldown tank raising pH injection pump – Call STERIS.* 5. Defective pH probe – Call STERIS.*
28. Alarm sounds and screen displays: **ALARM: WATER TOO LONG TO HEAT** Printer records: *ALARM WATER TOO LONG TO HEAT HH:MM:SS YY/MM/DD	**Temperature sensed by RTD has not reached set point within specified time.** (Water temperature time-out alarm (15:00) has elapsed before recirculating water temperature reaches setpoint). 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Building steam supply valve not fully open or closed – Check and open building steam supply valve as necessary. 3. Not enough building steam pressure – Call STERIS.* 4. Water heating alarm time too short – Call STERIS.* 5. Steam pressure below specifications – Call STERIS.* 6. Verify unit steam valve operation – Call STERIS.* 7. If condition reoccurs, call STERIS.*

* *Service charges may be incurred. Consult your warranty for details.*

Table 7-4. Troubleshooting Chart - Alarm and/or Printout (Cont'd)

ALARM MESSAGE	POSSIBLE CAUSE AND CORRECTION
29. **If Drain Discharge Cooldown option is present**, alarm sounds and screen displays: **ALARM: WATER** **TOO LONG TO COOL** Printer records: *ALARM WATER TOO LONG TO COOL HH:MM:SS YY/MM/DD	**Temperature sensed by RTD has not reached setpoint within specified time.** (Cooldown time-out alarm (02:00) has elapsed before water temperature in cooldown tank reaches temperature setpoint). 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Building cold water supply valve not fully open or closed – Check and open building supply valve as necessary. 3. Not enough building cold water pressure – Call STERIS.* 4. Defective cooldown tank or cold water injection system inlet valve – Call STERIS.* 5. Cold water temperature too high; not within equipment drawing specifications – Call STERIS.* 6. If condition reoccurs, call STERIS.*
30. Alarm sounds and screen displays: **ALARM: TANK 2** **TOO LONG TO HEAT** Printer records: *ALARM TANK 2 TOO LONG TO HEAT HH:MM:SS YY/MM/DD	**Temperature sensed by RTD has not reached setpoint within specified time.** (Water temperature time-out alarm (10:00) has elapsed before recirculating water temperature reaches setpoint). 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Building steam supply valve not fully open – Check and open building steam supply valve as necessary. 3. Not enough building steam pressure on the unit – Call STERIS.* 4. Tank 2 RTD malfunction – Call STERIS.* 5. Defective heat exchanger steam inlet valve – Call STERIS.* 6. If condition reoccurs, call STERIS.
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-4. Troubleshooting Chart - Alarm and/or Printout (Cont'd)

ALARM MESSAGE	POSSIBLE CAUSE AND CORRECTION
31. Alarm sounds and screen displays: **ALARM: pH INJECTION TIME TOO LONG** Printer records: *ALARM pH INJECTION TIME TOO LONG HH:MM:SS YY/MM/DD	**pH Injection time is longer than 15 minutes.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Neutralizing container empty – Replace container. 3. Verify pH neutralization parameters. 4. pH injection time longer than 15 minutes – Call STERIS.*
32. Alarm sounds and screen displays: **ALARM: TRAVELERS ARE NOT MOVING** Printer records: *ALARM TRAVELER ARE NOT MOVING HH:MM:SS YY/MM/DD	**Traveler system takes more than 18 seconds to go up or down during recirculation phase.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Traveler system is obstructed – Remove obstruction. 3. Building air supply pressure too low – Call STERIS.* 4. Traveler end position switches defective – Call STERIS.* 5. If condition reoccurs, call STERIS.
33. Alarm sounds and screen displays: **ALARM: CHAMBER PRESSURE TOO LOW** Printer records: *ALARM CHAMBER PRESSURE TOO LOW HH:MM:SS YY/MM/DD	• **During a regular cycle (chamber pressure is below -2 in Wg):** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Hot water temperature too low – Call STERIS.* 3. Vapor exhaust not performed properly – Call STERIS.* 4. Chamber pressure control valve not working properly – Call STERIS.* 5. Tank 2 heating coil is not working (If pure water option is present) – Call STERIS.* • **During a VHP cycle (chamber pressure below -3/8 in Wg):** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. VHP exhaust blower flow rate adjusted too high – Call STERIS.* 3. M-100 generator (single pass) blower not working – Call STERIS.*

* *Service charges may be incurred. Consult your warranty for details.*

Table 7-4. Troubleshooting Chart - Alarm and/or Printout (Cont'd)

ALARM MESSAGE	POSSIBLE CAUSE AND CORRECTION
34. Alarm sounds and screen displays: **ALARM: CHAMBER PRESSURE TOO HIGH** Printer records: *ALARM CHAMBER PRESSURE TOO HIGH HH:MM:SS YY/MM/DD	• **During a regular cycle (chamber pressure is over -2 in Wg):** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Hot water temperature too high – Call STERIS.* 3. Chamber pressure control valve not working properly – Call STERIS.* 4. Drying heat exchanger drain clogged – Call STERIS.* 5. Exhaust blower is not working – Call STERIS.* • **During a VHP cycle (chamber pressure over -1/8 in Wg):** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. VHP exhaust blower flow rate adjusted too low or not working – Call STERIS.* 3. VHP exhaust isolation damper open – Call STERIS.* 4. Chamber pressure control valve not perfectly closed – Call STERIS.* 5. Doors (load or unload) not properly sealed – Call STERIS.* 6. VHP exhaust filter clogged – Call STERIS.*
35. Alarm sounds and screen displays: **EMERGENCY STOP PRESSED**	**Load side EMERGENCY STOP button is pressed.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Turn EMERGENCY STOP button to disengage it. 3. Turn LOCK/UNLOCK/INIT selector switch to INIT position and return washer to normal operation (selector returns automatically from INIT to UNLOCK position when key is released). 4. Press **ABORT CYCLE** or **RESUME** touch screen.
* *Service charges may be incurred. Consult your warranty for details.*	

Table 7-4. Troubleshooting Chart - Alarm and/or Printout (Cont'd)

ALARM MESSAGE	POSSIBLE CAUSE AND CORRECTION
36. Alarm sounds and screen displays: **EMERGENCY STOP PRESSED (UNLOAD SIDE)**	**Unload side EMERGENCY STOP button is pressed.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Turn EMERGENCY STOP button to disengage it. 3. Turn LOCK/UNLOCK/INIT selector switch to INIT position and return washer to normal operation (selector returns automatically from INIT to UNLOCK position when key is released). 4. Press **ABORT CYCLE** or **RESUME** touch screen.
37. Alarm sounds and screen displays: **EMERGENCY CABLE ACTIVATED**	**EMERGENCY Cable inside washer is pulled.** 1. Press **Silence Buzzer** or **ACK** touch pad to silence alarm buzzer. 2. Check for obstruction inside chamber, remove obstruction if necessary. 3. Turn LOCK/UNLOCK/INIT selector switch to INIT position and return washer to normal operation (selector returns automatically from INIT to UNLOCK position when key is released). 4. Press **ABORT** or **RESUME** touch screen.
* *Service charges may be incurred. Consult your warranty for details.*	

REPLACEMENT PARTS AND PRODUCTS

8

IMPORTANT: *A listing of the Safety Precautions to be observed when operating this Cage and Rack Washer can be found in SECTION 1. Do not operate equipment until you have become familiar with this information.*

WARNING – PERSONAL INJURY HAZARD AND/OR EQUIPMENT DAMAGE HAZARD: Only STERIS or STERIS-trained service personnel should make repairs and adjustments to this equipment. Maintenance done by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty or result in costly damage. Contact STERIS regarding service options.

To order spare parts and/or supply products for your Basil® 5700LSR Cage and Rack Washer, proceed as follows:

1. Include description and part/order number as listed in **Table 8-1**.
2. Include model and serial numbers of your unit on your order.
3. Send your order directly to STERIS.

Contact STERIS for recommendations on exterior cleaning products or parts that are not listed below.

NOTE: Use only STERIS authorized parts on this equipment. Use of unauthorized parts will void the warranty.

A complete listing of replacement parts can be found in the *ILLUSTRATED PARTS BREAKDOWN* section *(P764333-608)* of the *MAINTENANCE MANUAL (P764333-607)*.

Table 8-1. Replacement Parts

DESCRIPTION	PART NUMBER
Consumables:	
Cage-Klenz® 100 Alkaline Cage Wash Detergent 5 gal. (18.9 L) Jug.	1K10-05
Cage-Klenz® 200 Acid-Based Cage Wash Detergent 5 gal. (18.9 L) Jug.	1k20-05
Liquid Descaler Acid-Based Scale Remover 1 gal. (3.8 L) Jug.	1051-08
Paper, Roll, Printer.	P117913-393
RIBBON, Ink	P117026-048
Lubricant, Silicone for Squeeze Tubes.	P117950-599
Bulb, Fluorescent, Flow, 18 W.	P117052-003
Ballast, 24W	P117057-669
Inlet Pre-Filter, for Drying Fan (Option).	P117989-188
HEPA Filter, for Drying Option	P117058-186

Table 8-1. Replacement Parts (Cont'd)

DESCRIPTION	PART NUMBER
Replacement Parts:	
VHP In-Line Filter	P117065-262
Spray Jet, Stainless Steel, 1/8" HU2510	P117909-578
Spray Jet, Stainless Steel, 1/8" HU2530	P117909-774
Bushing, Spray Header (Wash Chamber and Accessory)	P117005-978
Bushing, Top Rotary Spray Arm (Accessory)	P117987-854
Bushing, Hub, Central Header	P117996-805
Tubing, Air, 1/4" O.D., Red	P117955-228
Tubing, Air, 1/4", O.D., Blue	P117955-229
Hose, C-Flex, 1/2" I.D. x 7/8" O.D. (Squeeze Tube)	P117020-529
Fuse, 5 Amp, 600 V	P117909-034
Fuse, 6 Amp, 250 V	P117953-374